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Organized Medicine — A Professional Guild

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YOU have all, no doubt, heard the following story, which is an old one, but which is very pertinent to my subject today. A planter down in Kentucky had just employed a new mule driver, a negro. He handed the driver a new blacksnake whip, climbed up on a seat with him behind a pair of mules and asked the darky if he could use the whip. Without a word, the mule-driver flicked a beautiful butterfly from a clover blossom alongside the road. "That isn't so bad," remarked the planter; "now can you hit that honeybee over there?" Again the negro swung the whip and the honeybee fell dead. Noting a pair of bumblebees on still another blossom, the negro switched them out of existence with the cracker of his new whip and drew still further admiration from his new boss. A little further along the planter spied a hornets' nest in a bush beside the road. "Can you hit them, Sam?" he asked. "Yas, Sah, I kin," replied the negro, "but I ain't a goin' to, dey's organized."

Now I have a few things in mind relative to the value and status of organized medicine which I wish to bring to you and to impress upon you, as colored Sam was impressed with the organization of the hornets in their nest.

Meetings such as we are holding here at this time emphasize the value of organization. Whatever of worth there may be in the spirit of personal and professional fraternity which results from the coming together of the physicians of our guild has, as the motivating force behind it, the inestimable power of organization. A successful meeting in itself is a product of a vast amount of organization. This meeting will have missed its mark if it has not impressed on each one in attendance the essential need of preserving and building up this organization.

It is because you are organized that you have been able to pool your forces and your funds to bring outstanding speakers here to address you on the newest proven procedures in the fields of medical practice they represent.

Many medical leaders, nation-wide, have had much to say of late as to the changing aspects of organized medicine, linking the old with the new in a most appropriate manner. Because I am in such full accord with many of the sentiments I have seen expressed in medical writings of the past two years or so, I am going to incorporate some of these thoughts in my address today, as they are thoughts which have been near and dear to my heart for these many years, as they ring so true and so clear in this day of social confusion.

If you think I plan to engage in some boresome reminiscing or sermonizing, set your minds at rest, for I do not intend to do that. While the comments I shall make emanate from the more experienced men in the practice of medicine, they are not the thoughts of any "old fogey." Frankly, I do not like to hear the more experienced men in any walk of life referred to as "old fogies," any more than I do to hear the younger men in this or any other assembly, in the initial steps of their chosen calling, referred to as "young upstarts" or "whipper-snappers." There is no place in organized medicine for either "old fogies" or "young upstarts"—we are all professional men pulling together in a service for humanity.

This particular medical association assembled here for a three days' feast of scientific entertainment, will celebrate its fiftieth year of organization next year. Doubtless many of you were not aware, until you just heard the statement, that the Arizona Medical Association is on the eve of its Golden Jubilee.

The progress of scientific medicine during this half century of our existence as a local organization has truly been astounding. I need not recount these achievements to this audience, for no one knows better than you just what this progress has been. Nevertheless, with *all* this progress and *all* our scientific triumphs, organized medicine hears a discordant note as we approach the half way mark of the twentieth century. There are those sitting in what they and the public consider high places who seem to think that organized medicine exists to protect its own interests at the expense of the public at large, and to compel the conformity of its members to practices of so-called professional ethics. An impartial study of our professional ethics will reveal that they are inspired by

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the golden rule, are *not* against public policy, and are *not* a matter of sharply defined rules of conduct, but of fair dealing between physicians, and between physicians and their patients. I would remind such critics that "medicine exists for the benefit of the afflicted, and not the afflicted for the benefit of medicine." Mutual improvement in medicine, the interchange of experiences and opinions, the discussion of changes in medical practice —these are the outstanding purposes of our guild, and we must not and will not let the multiplying problems of a complex social economy divert our attention so that we forget these purposes.

I have said that there are those sitting in high places who are sounding a discordant note against organized medicine. This discordant note has to do with medical service rather than medical practice—and medical service at a price, the price being restriction and regimentation. Sounding this sour note are the economist and the sociologist who have arrived on the American scene and in the medical field. They are implemented by propagandists. By their activities they have diminished, and in some instances almost destroyed the faith of the public in the medical leadership which accomplished so much for the public welfare before the arrival of the expert economist and the expert sociologist. Their fascinating theories, couched in cleverly formed phrases and uttered in well-cultivated voices make a stronger appeal, in many instances, than the calm, logical voice of experienced medicine.

The economist forgets, or ignores, that the man of medicine is not trained to work for money. The medical student is taught from the outset that he is not to work for money or to work for fame, but to search for knowledge and to seek to relieve the suffering of mankind. If the economist has his way and continues to seek a service at a price, he will soon find himself in the position of the family employing a Chinese cook. In employing this Chinese cook the question of salary arose. "What do you charge for your cooking, Ying?" asked the lady of the house. "What kind of cooking you wantee?" countered Ying. "Me do $20 cooking, or me do $10 cooking." The physician, if permitted to continue with his private practice, will give his patients, as always, good substantial $20 cooking, but if hired to serve medicine at a price is very apt to lag into indifferent $10 cooking. If profit is to be removed from medicine, physicians will at best become draft animals. If the question of gain is to be removed from medicine and the general public taxed so that those not having medical care may have it, then why not sell automobiles at cost and levy a tax on the public so that those not able to buy automobiles even at cost may have them free. One proposition is as reasonable as the other in the final analysis.

A socialized medicine is being proposed in place of an organized medicine. Organized medicine has its roots in democracy, for "Wherever the art of medicine is found, there also is found a love for humanity." Socialized medicine does not have its roots in the democratic principles which have made this country great, for it would destroy individual initiative. It is true that the government must assume its rightful responsibility for the care of those on welfare rolls, but there must be a limit beyond which government must not stop without usurping personal responsibility. Government's first problem in medical service is to provide adequate care for those on relief; its second consideration is to permit the medical profession and organization to till its own field. "Medical problems can best be solved by medical practitioners, not by ambitious, if well informed, politicians who never circumcised a young man nor catherized an old one." Our changing medical service can and must be changed only by the physician himself, through his medical society, and not through regimentation. The medical practitioner must be free from bureaucratic control in order that he may go his untrammeled way in adding his mite to the beneficient influence which our profession has always contributed to the upward progress of humanity.

There is much in organized medicine on which to chew—organized medicine being the accumulated knowledge of master minds in the practice of medicine. It seems to me that the present-day reformist is failing to get at the meat of the thing. I am reminded of the Mutt and Jeff sandwich story. Mutt opened a sandwich shop and Jeff dropped in and ordered a ham sandwich. The sandwich was served. Jeff took a bite, looked at Mutt and said, "I don't taste any ham." Mutt replied, "You didn't bite in far enough." Whereupon Jeff took another bite, only to look at Mutt again and say, "I still don't taste any ham." "Of course not," countered Mutt, looking at the sandwich, "You bit over it that time." So it is with the socialistic critic of the practice of medicine. First, he does not bite in far enough. He says the profit motif of medicine is wrong, when it is not the profit motif at all. Modern business and industry is stimulated by the anticipation of financial gain, whereas with the practictioner of medicine it is as true today as it was in the day of Osler, except in rare instances, that the first five years of medical practice is the bread and water period; the second five years the bread and butter period, while in the third five years cakes and ale may be anticipated if the medical practitioner is fortunate. Business and industry is measured by *mounting* curves of production and consumption or supply and demand, whereas medical progress, in contrast, is measured by *declining* curves of demands for medical services.

The propagandist bites over the ham in the sandwich when he says that millions are going without medical care, but fails to find a way whereby those millions may be given sufficient gainful employment to provide them with the necessary food, clothing and shelter which have much to do with their basic health needs. The economist is accustomed to dealing with human beings in the mass,

whereas the medical practitioner deals with humans as individuals. There are a lot of human beings on earth. In the mass they are terrible, but individually few are bad. The physician deals with these individuals. His purpose is the care of the sick and the prevention of illness. Our guild exists that we may take better care of the sick. The purposes of organized medicine clearly state that we "shall promote the science and art of medicine, elevate the standards of medical education and promote the public health." The critic of organized medicine has failed to bite in that far and has not yet tasted the flavor and savor of the meat. He would make the practice of medicine ridiculous, and I would remind him, in the words of Sudhoff, that "Medicine is a sacred calling and he who makes it ridiculous is guilty of sacrilege."

It is true that the social order is changing. It is also true that the principles of organization—of *all* organization and not medicine alone—are changing. There must be changes all along the line, but these changes must be *evolutionary* and not *revolutionary*, if the principles of American living are to prevail. Cool, calm, collected thinking can bring order out of the present economic and social complexities, whereas the venom and passion of false values of living being flung by the propagandist will result in chaos and little else.

This brings us down to cases. There was a time when the major function of organized medicine was the promotion of scientific activities and the improvement of our scientific and professional standards. That function still maintains. In the past the legislative activities of organized medicine were directed mainly at protecting the public against inefficiently trained men, diploma mills, and substandard education. We supported efforts at preventive health measures. Our intra-organizational activities were devoted to scientific programs. As an organized profession we know little of public relation activities. In fact, we were left severely alone to treat the sick, and any problem involving medical service was *our* problem. The records of organized medicine and of the physician in his private practice show how squarely we met those responsibilities, and we felt then no need to justify our existence or to defend our prerogatives before the public.

Today the picture has materially changed. Organized medicine is deeply conscious of the responsibility that is ours, to maintain a structure which will insure a continuing improved medical service and sound progress in both the broad fields of public health and individualized medical service. This situation necessitates an understanding of social problems, political machinery, public or mass psychology, and of economics. Those charged with the responsibility of directing the destinies of organized medicine find themselves today coping with all sorts of medical problems not normally within the scope of the practicing physician. The hardest problem of organized medicine today and for the future lies not in the possible necessity of readjusting our economic set-up, but rather in holding to high ethical standards in the demoralizing effect of commercialization.

Many physicians hold a lethargic attitude toward the threats against organized medicine—they hope and pray that socialized medicine will not come to our people, and let it go at that. Two little girls were about to be late for school. Said one little girl, "Let's stop and pray that we won't be late." Said the other, "Let's pray, but let's keep running while we pray." The general practitioner of medicine must follow the suggestion of the second little girl—he must pray and keep running while he prays.

The general practitioner is the vertebra of medicine. He must be inspired to use his peculiar talents, for there are many physicians who are qualified for public leadership although very few exercise their abilities. Our association numbers in its ranks men of vision, capacity, resourcefulness and leadership. Let these men exert their abilities and let the rank and file of medical practitioners fall in behind them with a firm insistence for the preservation of the sound principles of our calling, an insistence which will not weaken in the face of the hysterical demands of the equally hysterical propagandist.

If American medicine is to be saved from disaster, it must be through organized medicine, and the individual physician must be prepared to play his part or take the consequences. Propaganda can be met only by counter-propaganda. Half truths, illogical deductions, insidious innuendoes, and their like, can only be met by refutations and counter-activities that give the lie to them. The National Physicians' Committee for the Extension of Medical Care is organized and constructed to do this. In a sense they are the minute-men of medicine and each of us should lend his support to the program they have undertaken.

In this, our medical organization in Arizona, the responsibilities pointed out do not rest entirely with the officers of your association. In the last analysis, the rank and file of the membership are the ones responsible. They should make it their business to take an active constructive part in the affairs of the association, keep themselves thoroughly and fully informed on the social and political problems and be prepared to meet them intelligently. They should elect to office, in county as well as state, men who are qualified to lead the affairs of organized medicine through the deepening waters of national strife and discord. The membership should give its unequivocal support to the officers elected by a constructive participation in all the deliberations and the activities of the society and of the association. If each individual physician will do his full part, both as a private practitioner of medicine and as a member of his professional guild, our case will rest pretty largely in the hands of our patients and ourselves and there will be little to fear as to the outcome. A great deal has been accomplished in recent years

through our organizations, county, state and national, but a great deal more can, and must, be done if we are to hold our proper position in this modern changing society.

You know the old adages such as "He can who thinks he can," and "Where there is a will there is a way," all of which apply to the solution of the problem before organized medicine. There is the more recent blank verse—most pertinent, indeed—unidentified as to author, which says, "The Lord gave man two ends, one to sit on and the other to think with. A man's success depends upon which end he uses most. It is a case of heads you win or tails you lose. Take your choice."

In the last analysis, however, if there be a cure for the existing disorders it may come when a courageous leader arises who will tell the people that the hard, thorny path to the only Utopia we can ever have on earth requires that we be honest and not evasive with ourselves, our problems, and our fellowman. This would apply to physicians and reformists alike. When people in all walks of life, in all businesses, all industries, and all professions will accept their difficulties instead of trying to escape them, try to make themselves more worthy, try to *give* more, rather than to *get* more, perhaps the way out will be made clear.

Until that day comes, I say: Here is your organization. Use it. Serve it. Chart your course and set your sail. Face the storms and meet them. Organized medicine can ride the crest and hold firm to its democratic course which has served humanity throughout the ages. As we sail, let us remember—

"Some ships strike East,
Some ships strike West,
While the self same breezes blow.
It's the set of the sail
And not the gale,
Which bids them where to go.

Like the winds of the sea,
Are the ways of fate,
As we journey along through Life;
It's the set of the Soul
That determines the goal,
And not the calm or the strife."

Professional Bldg.

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Tube Decompression in Intestinal Obstruction

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IT HAS long been known that the mortality rate in intestinal obstruction is high, and that this has been especially true in the cases of postoperative obstruction. Actually the mortality rate has seldom until recently been less than 35%, and for the most part has ranged between 35% and 60% in the various clinics and hospitals of the world. In spite of the voluminous literature on the subject and the vast amount of work which was done previous to 1933 on intestinal obstruction in the attempt to establish the factor or factors responsible for death in obstruction of the bowel, the management has settled down to a very few definite principles, namely, (1) early recognition, (2) early operative treatment, and (3) maintenance of fluid and chemical balance. These principles have been emphasized so much in the literature since 1915 that they should now be accepted as gospel. While the factor of distention has been mentioned in the literature from time to time in the past, its real significance has been repeatedly pointed out since 1931 by Wangensteen[1, 2, 3, 4] and his co-workers, and it is now quite generally accepted that distention of the bowel which results in increased intraluminal pressure, decreased viability, and increased permeability of the intestinal wall, and generalized peritonitis, is the chief factor in most of the fatalities which occur in simple organic intestinal obstruction, and that the chemical and so-called toxic changes are only secondary to this factor. This, of course, does not apply to the strangulation type of obstruction where the blood supply to the bowel is impaired. In 1938 Wangensteen[3] presented very convincing evidence that swallowed air is largely responsible for the distention in the presence of obstruction. In 1939 he[4] and his co-workers reported the results of the management of distention over a 7-year period by means of tube suction drainage, and their results are so conclusive that we must now recognize this method of management of distention as another very definite principle in the treatment of certain types of intestinal obstruction.

Many surgeons have made the observation that if distention can be prevented or relieved, then simple organic obstruction does not constitute a surgical emergency, and if satisfactory decompression of the intestinal tract is obtained many of the early postoperative obstructions will be relieved permanently. Previous to the introduction of the tube method of

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decompression, an enterostomy was frequently employed for the relief of distention. Although the operation of enterostomy has been in use since the time of Renault, it is only in relatively recent years that it has been popularized as a simple decompression procedure to supplant exploration and corrective operations in the emergency treatment of acute mechanical obstruction. Even as a decompression procedure, the merits of this operation are difficult to ascertain, as has been pointed out by Shelley,[5] and by Fey and Cubbins.[6] Certainly the results of enterostomy do not compare with those of tube decompression.

As the result of the work of Miller, Abbott[7, 8] and Johnston,[9, 10] we now have a method of intubation of the entire small bowel by means of the Miller-Abbott tube. The tube consists of a double lumen tube; the smaller inner tube serves the purpose of distending a balloon at the distal end of the outer tube after the first portion of the duodenum has been passed. The technic of passing this tube is similar to that of passing any tube as far as the stomach. The tube is slipped through the nose, and with the patient drinking water, it is swallowed readily into the stomach. At 45 cm. the tip of the tube will lie just within the stomach of the average adult patient. The stomach is washed clean and should be empty. The patient is then turned on the right side, allowed to drink water, and the tube is advanced slowly so that in 3 or 4 hours the 75-cm. mark will have been passed. In about 50% of the cases the tip of the tube will then lie in the duodenum. In our experience the best criteria that the tube is in the small bowel are the character of fluid recovered through the tube, the sense of resistance encountered as the balloon is distended, and the roentgen film. In those patients in whom the tube does not pass, a number of things may be done to facilitate its passage. The tube is withdrawn to the 45-cm. mark and often it is possible to pass the tube through the pylorus by slowly advancing it while a discussion is engaged in about such food or liquids as might appeal to the patient, thereby instituting gastric peristalsis by the psychic stimulus. Also, the patient may be rapidly atropenized in the hope of producing relaxation of the pylorus. However, the objection to atropine is that it accelerates the usually already rapid pulse. Fluoroscopic guidance of the tube can be carried out if the patient is not too ill to stand the necessary changes in position. Success in one instance in which all other methods had failed was obtained by turning the patient on the extreme left side, filling the stomach with water, the balloon with air and gradually advancing the tube under the fluoroscope the air-filled balloon floating upward to the pylorus. The stomach and the balloon were then emptied, and after the patient was returned to bed he was given a bottle of beer, which he had been craving for days. Within 3 hours the tube was in the duodenum.

Care must be exercised not to advance the tube too rapidly before it has passed the pylorus. If the tube is allowed to buckle or coil up in the stomach, it is improbable that the tip will enter the duodenum. After the tube is definitely in the small bowel and the balloon has been distended, it may be advanced at the rate of from 4 to 6 inches an hour. Continuous suction is maintained and the tube is irrigated frequently. While no method of passing the tube succeeds in every case, and while as yet no standardized technic has been established which will assure its early passage in all cases, resort to the various maneuvers usually will result in successful intubation of the intestine. It should be remembered that one is working against time while the intubation is being carried out, during which a simple mechanical obstruction may become converted into obstruction complicated by peritonitis. Careful, patient supervision of the entire procedure and close observation of the patient are necessary at all times. The relief to the patient is usually prompt and remarkable, and may be observed very soon after the tube has passed the pylorus.

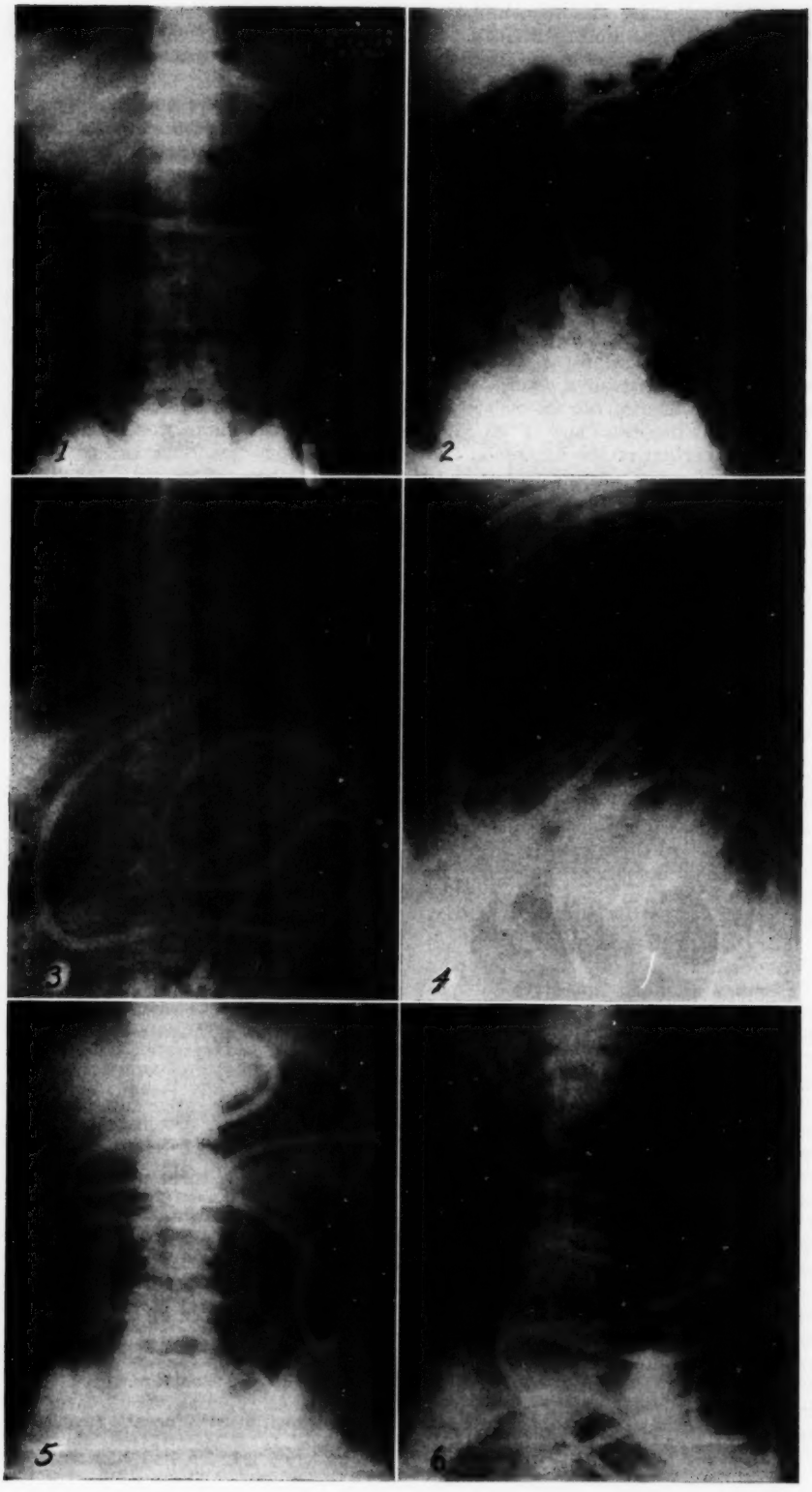
CASE REPORTS

The following cases are representative of various types of intestinal obstruction which have been treated by the tube suction decompression.

Case No. 1. On June 3, 1939, a male, 30 years of age, was operated upon at St. Vincent's Hospital for an acute retrocecal appendicitis. On the third postoperative day he developed signs and symptoms of mechanical obstruction of the small bowel. A Levine tube was introduced and suction was maintained for 4 days. He was given intravenous fluids, and hot stupes were applied to the abdomen. The abdomen remained somewhat distended, the patient passed neither gas nor feces in spite of enemas, and there were intermittent colicky pains with associated audible peristalsis. The Levine tube was then removed and the Miller-Abbott tube was passed into the stomach. In 5 hours the tip of the tube was in the upper small bowel; in 48 hours the abdominal distention had disappeared and some flatus was passed. On the third and fourth days the patient passed large, soft stools. The tube was clamped off at this time and it was removed on the fifth day. The patient was dismissed from the hospital 4 days later, and has had no obstructive symptoms in the year which has elapsed.

Case No. 2. On August 22, 1938, a female, 19 years of age, was operated upon at St. Vincent's Hospital for an acute gangrenous appendicitis with marked edema of the terminal ileum and cecum. On the sixth postoperative day symptoms and signs of acute small bowel obstruction developed. A Levine tube was passed and suction was maintained for the following 3 days, during which time no flatus was passed, there was intermittent colicky pain and the abdomen remained moderately distended. On the ninth postoperative day the Miller-Abbott tube was passed and the tip entered the duodenum in 5 hours. On the following day flatus was passed, the abdomen was less distended, and on each of the subsequent 2 days the bowels moved. The tube was clamped off on the morning of the third day and it was removed that evening. The patient was dismissed from the hospital on the fourteenth postoperative day and she has since had no symptoms of obstruction.

Case No. 3. A male, 18 years of age, was operated upon at St. Vincent's Hospital on September 20, 1939, for acute recurrent appendicitis. Three months previously he had had acute appendicitis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and at operation elsewhere an abscess was encountered which was drained. He developed postoperative intestinal obstruction immediately following drainage of the appendiceal abscess, which was treated by Miller-Abbott tube decompression with complete recovery and no recurrence of obstructive symptoms. At operation we found, in addition to the subacute appendicitis, many loops of small bowel which were densely adherent in the pelvis. A Miller-Abbott tube was passed into the stomach the afternoon of the day of operation, but it did not pass into the small bowel until 60 hours had elapsed. The tube traversed all of the small intestine during the following 24 hours and was removed on the fifth day. The patient was dismissed from the hospital on the eleventh postoperative day and has remained well since.

Case No. 4. A male, 67 years of age, was admitted to St. Vincent's Hospital on November 12, 1939, because of abdominal pain, nausea, vomiting and fever. His history consisted of increasing constipation for the past year; the stools contained blood. Bowel movements for the past week had been scant. The temperature was 102 degrees, the abdomen was distended and rigid, and there was evidence of fluid in the peritoneal cavity. The vomitus was fecal in character. The patient was dehydrated. The leukocyte count was only 4,400, and there were 61% neutrophiles. A diagnosis was made of large bowel obstruction with generalized peritonitis, and a fatal outcome was predicted. Because it seemed highly improbable that the patient would withstand any operative procedure a Miller-Abbott tube was passed; 48 hours elapsed before the tube entered the small bowel. The patient was semi-conscious, a great deal of difficulty was encountered in advancing the tube, and decompression was unsatisfactory. Twenty-five hundred cubic centimeters of thin, brown fecal fluid were recovered the first 24 hours after the tube entered the small bowel and 1300 cc. during the following 24 hours. The patient expired 4 days after admission to the hospital. An autopsy revealed complete obstruction of the rectosigmoid by a ring carcinoma, marked distention and thinning out of the large and small bowel, and generalized peritonitis.

Case No. 5. A 68-year-old female was admitted to St. Vincent's Hospital on December 9, 1939, complaining of obstipation, small, painful, watery stools, colicky abdominal pains, and nausea and vomiting of 17 days' duration. During the previous year there had been two similar attacks, each lasting for several days. Constipation had increased after each attack and bowel movements had been painful. The patient had not seen blood in the stools, but members of the family had repeatedly observed blood in the toilet. Laxatives had increased the abdominal pain and the vomiting, and had been followed by frequent small, watery stools. The abdomen was distended and tense, there was marked tenderness in the left lower abdomen, and peristalsis was increased. There was a hard, doughy, irregular, fixed mass in the posterior culdesac, which seemed to lie anterior to the rectum, but not to involve the lumen of the rectum. A clinical diagnosis was made of perforating diverticulitis of the sigmoid producing practically complete obstruction. A Miller-Abbott tube was passed, and 18 hours were required for the tube to pass into the small bowel. The tube traversed and decompressed all of the small bowel in the following 48 hours. During this time glucose and saline were given intravenously, and on December 12, 1939, the patient was operated upon, at which time she was in much better condition than upon admission to the hospital. A very extensive inflammatory mass was found in the pelvis, producing obstruction of the sigmoid, and a colostomy was made. The patient expired on the following day. At autopsy the findings were (1) multiple diverticula of the sigmoid, and (2) acute diverticulitis with pelvic cellulitis.

Case No. 6. A boy, 10 years of age, was operated upon at St. Vincent's Hospital 11 hours after the onset of abdominal pain with nausea, vomiting and fever. At operation the findings were those of a perforated, gangrenous appendicitis with diffusing peritonitis. Appendectomy was performed and drainage was instituted. Two days later symptoms occurred of spreading peritonitis with severe ileus. Levine tube suction was started and maintained for 2 days, during which time improvement did not occur. On the fourth postoperative day a Miller-Abbott tube was passed into the stomach and for the following 4 days all attempts to pass the tube into the small bowel were unsuccessful. The patient expired on the eighth postoperative day. Permission for an autopsy was not granted.

Case No. 7. A male, 33 years of age, was seen in consultation on January 24, 1940, because of symptoms and signs of acute small bowel obstruction. Operation had been performed 13 days previously for acute, perforated appendicitis with peritonitis. Following operation the treatment had consisted of Levine tube suction, intravenous fluids and neoprontosil. The abdomen was distended, the fever was 102 degrees, and the emesis was fecal in character. A Miller-Abbott tube was passed into the stomach and it required 40 hours to pass it into the small bowel even with the aid of fluoroscopic guidance of the tube. Fifteen hours after the tube was demonstrated to be in the small bowel the distention was less, the pain had subsided and there was marked improvement in the patient's condition. Twenty-four hours later a flat film of the abdomen showed the tip of the tube to be in the terminal ileum, decompression was complete and the patient had a bowel movement. The tube was removed 7 days after it was first passed into the stomach. The patient was dismissed from the hospital on February 15, 1940, with no further signs of obstruction.

Case No. 8. A female, 26 years of age, was seen in consultation on February 12, 1940, because of generalized peritonitis with severe ileus. The patient had been in the hospital for 3 days, during which time the distention had increased in spite of Levine tube suction. The history consisted of constant abdominal pain with increasing abdominal distention, nausea, vomiting and fever for one week previous to admission to the hospital. Harris flush and enemas had been productive of very little gas or fecal particles. The Levine tube was removed and the Miller-Abbott tube was passed into the stomach. The tip of the tube was proved to be in the small bowel in 5 hours. A great deal of difficulty was encountered in advancing the tube and the results were not entirely satisfactory. The patient vomited several times and it was necessary upon a number of occasions to pass a Levine tube into the stomach for the purpose of gastric lavage. However, neoprontosil was being given intramuscularly, and it was observed that the vomiting oc-

LEGENDS

1. Case No. 1: Five hours after the Miller-Abbott tube was introduced, showing the tip just entering the duodenum.

2. Case No. 2: Ten hours after the Miller-Abbott tube was introduced, showing the tube well advanced in the jejunum.

3. Case No. 4: Seventy-two hours after the Miller-Abbott tube was introduced, and twenty-four hours after it had passed beyond the pylorus. The tube buckled in the esophagus when it was advanced with force because of the absence of peristalsis.

4. Case No. 5: Sixty hours after the Miller-Abbott tube was introduced, showing the tip of the tube in the terminal ileum and complete decompression of the small bowel.

5. Case No. 8: Eight hours after fluoroscopic guidance of the Miller-Abbott tube.

6. Case No. 8: Thirty hours after the Miller-Abbott tube had passed beyond the pylorus with practically complete decompression of the small bowel.

curred shortly after the administration of this drug. Five days after the tube was introduced, decompression seemed to be complete, the abdomen was soft and not distended, gas was passing freely, there had been several bowel movements and the fever had subsided. The tube was removed on the evening of the fifth day, and the patient was dismissed from the hospital on February 24, 1940.

DISCUSSION

Cases Nos. 1, 2, 7 and 8 prove the efficacy of tube suction decompression in intestinal obstruction. However, I feel that an error was repeated in each of these cases. Levine tube suction was instituted and maintained for a variable period of time and in each case this proved to be valuable time lost. I am of the opinion that the principle of early, adequate treatment should pertain to this method of management as rigidly as to the surgical management of intestinal obstruction and that when tube decompression is indicated, it should be instituted as early as possible.

In Case No. 3 the tube was used prophylactically because the patient had had obstruction of the small bowel 3 months previously, following drainage of the appendiceal abscess, and the condition of the small intestine at the time of the appendectomy was such that a repetition of the obstruction was probable. I believe that the use of the tube was justifiable in this case.

No. 4 is a borderline case. The patient had generalized peritonitis as the result of leakage through the obstructed, devitalized bowel at the time of admission to the hospital. Very probably the bowel was damaged beyond repair by the distention which had persisted for at least a week without treatment. It is doubtful whether an emergency cecostomy would have changed the course of events, and attempted tube suction decompression served only as a gesture. No. 5 is also a borderline case, but it would seem that decompression was beneficial in view of the fact that the decompression took place during the time when dehydration and chemical inbalance were being treated. The patient did not have generalized peritonitis as the result of the obstruction. Case No. 6 was entirely unsatisfactory because of failure to pass the tube beyond the stomach.

Before attempting to treat intestinal obstruction by intubation of the intestine, the type of obstruction must be ascertained as accurately as possible. An attempt has been made to classify intestinal obstruction according to the applicability to this method of management of the distention factor.

I. Tube suction decompression indicated in:
   1. Non-inflammatory obstruction of the small bowel.
      a. Simple mechanical obstruction.
      b. Paralytic ileus.
   2. Inflammatory obstruction of the small bowel.
      a. Localized peritonitis with obstruction.
      b. Generalized peritonitis with ileus.
      c. Generalized peritonitis with mechanical obstruction of the small bowel.

II. Borderline cases:
   1. Mechanical obstruction which has resulted in peritonitis.
   2. Acute large bowel obstruction.

III. Tube suction decompression contra-indicated in:
   1. Intussusception.
   2. Strangulation obstruction.
      a. Volvulus.
      b. Strangulated hernia with obstruction.
      c. Adhesive strangulation obstruction.
   3. Mesenteric thrombosis.

Cases falling into group I may be safely decompressed and in many of the instances the obstruction will be permanently relieved. In some cases surgical release of the obstruction will be necessary, but it may be done with a great deal less risk after the bowel is decompressed and the acute process has subsided.

Group II-1 comprises borderline cases. It is probable that intestinal intubation offers very little in these cases, but it is generally known that surgical measures are also often futile, and that the mortality rate will approach 100%.

The cases in group II-2 are also borderline at the present time. Although surgical attack upon the obstructing lesion must be made in practically all of these, it is my opinion that in many instances the patient will be materially benefited by decompression while the usual rehabilitation measures are being carried out, provided valuable time is not lost in passing the tube.

All of the cases in group III are definitely acute surgical emergencies and should not be treated by intestinal intubation. Should one institute this method of decompression when question exists as to the nature of the obstruction and subsequently decide that the obstruction is of the strangulation type or one in which the vascular integrity may be jeopardized, the patient should be operated upon immediately.

The differential diagnosis of the various types of obstruction is often difficult. However, Wangensteen[4] has pointed out that careful interpretation of clinical observations will usually aid one in arriving at a correct diagnosis. When an error is made it usually is one of interpretation of the observations. Pain in the cases falling in group III usually is severe, constant and localized. There may or may not be a palpable mass. Localized tenderness is a most important symptom and it must be carried in mind that in a patient suspected of having obstruction in whom definite localized pain and tenderness are constant, more than a simple mechanical obstruction usually exists.

Tube suction decompression has proved to be a valuable adjunct in the management of the distention factor in certain types of intestinal obstruction. It is essential, first of all, that one master the various methods under variable circumstances of intubating the intestinal tract. In order that one may obtain the most satisfactory results following suction decompression, the diagnosis of in-

testinal obstruction must be made early. The percentage of good results following its use will depend upon the judicious selection of cases, adherence to the principle of early diagnosis and early treatment, and careful, patient supervision of the entire procedure.

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Spinal Injuries with Nerve Damage

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THE proper care of spinal injuries at the scene of the accident is vitally important because of the possibility of spinal cord or spinal nerve damage. Over-enthusiastic bystanders may cause severe and occasionally fatal injuries simply by poor handling of the patient. Therefore, the importance of proper, careful handling of the patient cannot be over-emphasized.

Fractures of the spine are usually the result of hyperflexion injuries, such as those sustained in automobile collisions, falling in the sitting position, etc. In such accidents, the spinal cord and nerves are damaged by pressure of the laminal arch against the lower vertebral body, by fractures and dislocations, or by any combination of these injuries. Depending on the severity of the injury, the spinal cord and nerves may be compressed, contused, lacerated or completely severed.[1]

FIRST AID

The proper first aid care of these patients is vital. After the patient is treated for pain and shock, he can be moved if three important postulates are remembered: (1) to take plenty of time; (2) to gently extend and fix the spine, and (3) to use gentle traction on the head, especially in cervical lesions (Figs. 1 and 2).

Hyperextension of the thoracic and lumbar spine (Fig. 3) while the patient is being transported may be accomplished by carrying the patient face downward in a blanket or by carrying him face downward, supporting his shoulders and feet. Twisting the spine must be avoided because of the possibility of further cord damage.[2]

Morphine can be used to relieve pain if it does not interfere with the neurological examination.

Shock should be treated by warmth, fluids and blood transfusion. Carelessly applied hot water bottles or electric pads should not be used on the patient because he is already anesthetic and may be easily burned.

Read before the forty-eighth annual session of the New Mexico Medical Society May 11, 1939, Gallup, New Mexico.

ESTIMATION OF INJURY

An immediate estimation of the severity and location of the level of the spinal lesions is important both from the medico-legal and therapeutic standpoints. This record should be made in writing so that it may be easily referred to later.

Such an estimation can be carried out briefly in the following manner:

1. Ask the patient to move his hands and feet gently.

2. Observe the skin area involved in sweating and gooseflesh, as this will usually correspond to the sensory level of the lesion.

3. Observe and record the sensory level, reflexes, motor power and level of pain.

4. Pinch the great toe. If there is no sensation, the spinal cord is probably completely severed.

5. Note any angulation of the spine.

6. Examine the back of the throat for any evidence of forward dislocation of the first four cervical vertebrae.

7. Do not press upon the spinous processes, since there is danger of producing further nerve damage.

8. X-ray the patient in the position of hypertension and never hesitate to x-ray the entire spine if the first examination is not satisfactory.[3]

After all necessary emergency treatment has been given and the patient is as comfortable as possible, a more complete neurological examination should be performed. This will help to answer the question, "Will the patient ever walk again?" and will indicate the lines for further treatment. This may show a completely or partially severed cord:

(a) When the spinal cord is *completely severed*, there will usually be three stages of symptoms. First, during spinal shock, the muscles below the lesion will be paralyzed, toneless and flabby, all reflexes will be absent, and there will be a retention of urine and feces. Second, during the stage of reflex activity, the extremities will be spastic and respond to painful stimuli by a massive flexor spasm. The filled bladder will be evacuated, and occasionally sweating in the paralyzed area, pri-

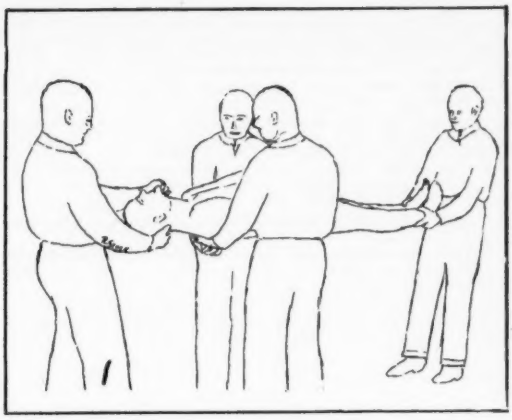

Fig. 1. Carrying patient with broken neck.

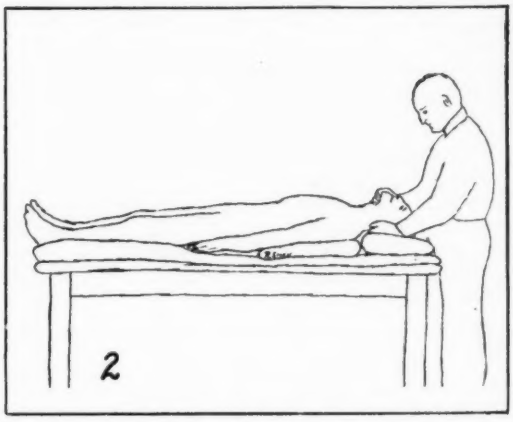

Fig. 2. Fixation of cervical spine in hyperextension with gentle traction. Pillow under the shoulders and sandbags at the sides of the head.

apism and ejaculation may take place. The third stage, which is similar to the first period of shock, develops as a terminal event, or if debility or a severe infection set in.

Absence of deep pressure pain in the great toe is evidence of complete irrecoverable sensory and motor loss. Because the nerve tracts carrying periosteal or deep pain sense from the great toe to the brain in man are located in the central portion of the spinal cord, deep pressure pain in the great toe is not likely to be lost except in severe injuries to the spinal cord.[4]

(b) If the spinal cord is *compressed* or *contused*, varied symptoms may be present; paralysis of muscles below the lesion will be partial, and sensory loss may be incomplete. Deep pressure pain in the great toe will not be lost, and the extremities will respond to painful stimuli by an extensor response. In bed, the patient may lie in hypertension. Movements in response to pain will be incoordinate and spastic. The Babinski sign may appear early after the injury, and the massive reflex response will not be elicited. A very short period of shock or none at all may be present. Furthermore, the paralyzed extremities will possess some tone and function, and the anesthesia will not be complete.[5]

LEVEL OF SPINAL INVOLVEMENT

The approximate spinal level may be ascertained rapidly if these facts are remembered:

(a) Damage at the level of the first or second cervical segment may produce an early loss of consciousness, stertorous, irregular and shallow breathing, and rapidly lead to death.

(b) Damage at the level of the third or fourth cervical segment may produce a respiratory difficulty and asphyxia, the result of inability to expand the chest. Loss of consciousness is late; these patients may live for weeks or months.

(c) With injuries at the fourth cervical segment, the deltoids, biceps, brachialis and supinators are paralyzed, the patient will lie in bed with his arms abducted, his forearms flexed and rotated outward.

(d) The muscles involved when injuries are at lower spinal levels are as follows: fifth cervical, deltoid; sixth cervical, biceps; seventh cervical, triceps; first to eighth thoracic, the corresponding intercostal muscles; ninth and tenth thoracic, the upper abdominals; eleventh and twelfth, the lower abdominals; second to fourth lumbar, the adductors of the thighs; and fourth lumbar, the dorsiflexors of the foot.

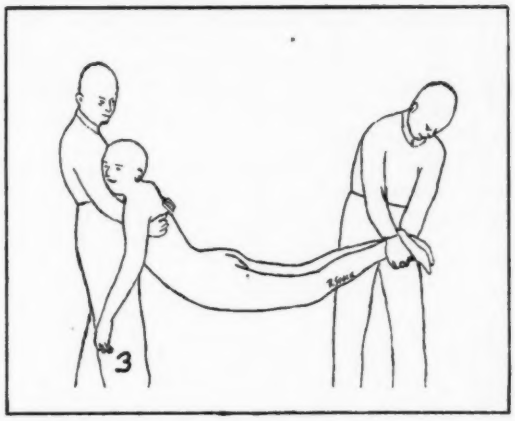

Fig. 3. Fractures of the lumbar spine should also be carried in hyperextension.

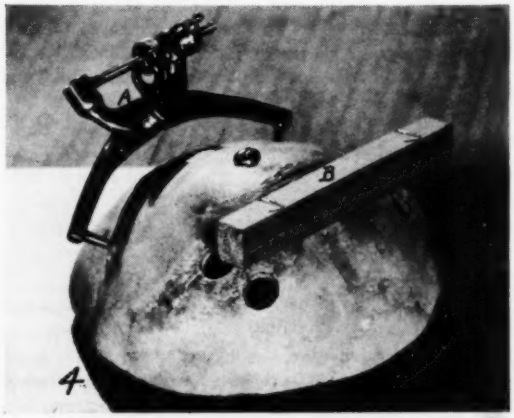

Fig. 4. A. Crutchfield skeletal traction tongs.
B Hoen skeletal traction wires.

All of the above details cannot be remembered at each examination, but the recall of a few general points will assist in the localization. In cases of transection of the cord in the cervical region, an extreme hyperthermia is usually present, due to a paralysis of sympathetic nerves with a loss of sweating and conduction of heat from the body. The level of sensory and motor loss, of course, aids in the location of the lesion.

Impairment of chest expansion below a definite level with an associated sensory loss below this level indicates a thoracic lesion.

Sensory, motor and reflex responses will localize the lesion at any level.

The site of the pain, the contusion to the back, the spinal deformity, the position in which the patient is found, and the x-rays are all important in localizing the lesion.

TREATMENT

Shock, when present, should be treated in the usual way by application of warmth and injection of fluids, including blood when necessary.

As a part of the routine neurological examination, a spinal puncture should be performed. Blood in the spinal fluid is evidence of subarachnoid hemorrhage; and an increased number of white cells, meningitis. Xanthrochromic spinal fluid or clear spinal fluid with an increased protein which clots on standing indicates a partial or complete spinal block. The Queckenstedt test is most satisfactory in the thoracic and lumbar lesions. In cervical lesions, it is not advisable to use the Queckenstedt test with manual jugular compression because such manipulation may further dislocate the spine and injure the cord; the Grant method of putting a blood pressure cuff about the neck to produce compression is preferable and safer.[5, 7]

EMERGENCY CARE

Patients should first be placed in a position of hypertension with traction. In cervical lesions, the early application of skeletal traction (Fig. 4) will save many lives. I prefer the Crutchfield skeletal traction tongs because of their ease of application and their small size.[7] Hyperextension and fixation of the thoracic and lumbar spine are easily accomplished with the hyperextension frame or body cast.

Where there is already evidence of nerve damage or cord compression, any manipulation of the spine under an anaesthetic is dangerous. Such a procedure may permanently paralyze or kill the patient.

Laminestomy should be performed immediately if spinal cord or spinal nerve compression can be demonstrated or if there is a progressively increasing paralysis.

DELAYED LAMINECTOMY

If no spinal cord or spinal nerve compression can be demonstrated or if no increasing paralysis appears, laminectomy may be delayed several hours. If the neurological examination is repeated frequently, a progression of symptoms may be discovered and indicates immediate operation. Occasionally, however, the patient may show progressive improvement simply with hyperextension, traction, and fixation of the spine. When conservative methods have failed, laminectomy should be performed at any time that there is a question of spinal cord or spinal nerve compression.

LATE LAMINECTOMY

Laminectomy should be done even a week or more after the injury if spinal cord or spinal nerve compression can be seen to be present. A week or more after an injury, evidences of compression are (a) x-ray changes in the position and condition of the vertebrae, (b) spinal block as demonstrated by the Queckenstedt test, and lipiodol or air injection, (c) increased protein in the spinal fluid, and (d) the neurological findings.

OPERATIVE PROCEDURE

For their surgical treatment, patients should be kept in hyperextension with traction as this position results in the least possible damage to the nerve structures. The operation is frequently performed most satisfactorily under local anesthesia, which minimizes surgical trauma. The surgical procedure should entail laminectomy with removal of all compressing structures: bony fragments, torn ligaments, and hemorrhages. Hemorrhages within the substance of the cord should be identified and aspirated to avoid herniation of the cord. If the cauda equina or any spinal nerves have been severed peripheral to their ganglia, they should be repaired as any other peripheral nerve. When one or two spinal ganglia have been crushed, it is usually best to sever their posterior nerve root certally in order to prevent post-traumatic root pain.

POSTOPERATIVE CARE

Adequate nursing care should be provided. Attention should constantly be paid to sudden rises in temperature, distended or infected bladders, and skin ulceration.

The care of the bladder is an important problem. Formerly, the retention catheter with occasional changing and frequent irrigation was used. With the new tidal drainage method of Munro,[8] the old bladder infections are done away with and bladder tone is maintained. With this method available, suprapubic drainage is now indicated only in severe bladder infections.

The decubitus ulcer may be prevented by frequent turning of the patient, frequent changing of the linen, especially when soiled, and the use of such mattresses as the beautyrest. Keeping the skin clean, dry and oiled if it is too dry, and using sheets that are clean, smooth and unstarched will help to prevent the formation of ulcers. When hot water bottles are used they must be well protected for they may burn the paralyzed patient and initiate an ulcer.

Well-instituted physiotherapy will prevent contractures and wasting of muscle groups until their function returns.

The extent of rehabilitation of these patients is proportional to the interests of the doctor and the family. Except in high cervical lesions, there are

usually jobs that these patients can perform if they are adequately taken care of in the meantime.

CASE REPORT

C. P. A., male, age 36, referred by Dr. R. S. Johnston, of La Junta, Colo. He gave a history of an automobile accident on the first of September, 1938. He was unconscious for several hours, and confused and amnesic for 3 or 4 days. In the accident, he received injuries to his head, chest, right arm and right leg. As he began to clear mentally, he complained of headache, diplopia, weakness of the left upper extremity and slight left deafness.

The neurological examination revealed a patient sluggish in his responses, indifferent and unconcerned about his condition. There was a diminished sense of smell on the right, bilateral N VI weakness, increased deep reflexes on the left, absent abdominal reflexes, and sluggish cremasteric reflexes. The sensory examination showed a hyperesthesia on the right side of the body. Motor power showed the right grip 90 and the left 20.

At this time it was suggested that the patient had a subdural hematoma, and bilateral trephines were recommended. However, as the patient was improving, it was decided to delay treatment.

On October 14, 1938, examination revealed a wasting of the left upper extremity, a diminution of pain sense and heat and cold below the shoulder on the right and in the cervical region on the left, with pain in the left upper extremity. X-rays of the skull were essentially negative.

On October 17, 1938, x-rays of the cervical spine showed a slight forward dislocation of the fifth and sixth cervical vertebral body and a partial crushing of the sixth intervertebral disc. The right pedicle of the fifth cervical vertebra showed a mild separation.

Lumbar puncture revealed no evidence of block. Skeletal traction was advised for the relief of this dislocation and nerve compression. The Crutchfield skeletal traction tongs were applied October 24, 1938. In about 48 hours all pain ceased in the left upper extremity, and an x-ray of the spine showed the vertebra in good alignment. This traction was maintained for two weeks, and then the Forrester collar applied. The latter treatment was not satisfactory, and an orthopedic consultant recommended and applied a Minerva jacket on December 31, 1938. Two weeks later this was bivalved and a form was made for a celluloid jacket; 10 days later the latter was applied.

Since the application of the cast following the traction, there has been no recurrence of the pain in the left upper extremity, and there has been a progressive improvement.

SUMMARY AND CONCLUSIONS

1. It is reiterated that all cases of spinal injury must be handled carefully at the scene of the accident to prevent needless nerve damage.

2. An estimate of the severity of the patient's nerve injury can be made briefly at the scene of the accident by following the plan of examination suggested. Such a record is valuable both medicolegally and prognostically.

3. Any neurosurgical procedure is indicated only after a careful examination with particular reference to the neurological findings.

4. Laminectomy for relief of spinal cord or nerve compression is indicated with: (a) Progressive paralysis. (b) X-ray evidence of spinal cord or spinal nerve compression. (c) Spinal block as shown by the Queckenstedt test, by increased spinal fluid protein, and by spinal air or lipiodol injection.

5. Proper nursing care will prevent the usual complications of bladder infections and decubitus ulcers.

6. If sufficient interest is shown in the well-being of patients afterwards, jobs can be found for them and many rehabilitated.

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Treatment of Inflammatory Lesions by Radiation

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THIS paper is primarily a report of results of x-radiation treatment of gangrene. During the past two years twelve cases of this particular malady have been so treated in our offices. Ten of these recovered and two died. The deaths will be discussed in more detail. Five of these cases had amputation as well as radiation. In two of these amputation was performed because of the trauma incident to their initial injury and one of these was so treated while receiving x-ray treatment. The remaining three were treated for gas gangrene in an amputation stump. It is presumed that amputation in all these cases was done because of tissue destruction and *not* as a therapeutic procedure for gas gangrene. Most of these cases are among transients who were injured in accidents involving freight trains, public highways, etc., all of which are potential sources of gas bacillus infection. It is obvious that in the cases in which gas gangrenous stumps were treated if the amputa-

tions were performed as therapy for gas gangrene the treatment failed because the disease was still present and was not eradicated until the x-ray treatment was given.

All the cases received anti-sera in prophylactic dosage along with tetanus anti-toxin. One got mixed gas bacillus serum in therapeutic dosage. In this case it is interesting to note that his temperature was normal on the day following x-ray treatment. On that same day he received the serum, which was followed by a moderate reaction and temperature elevation with the usual chain of serum sickness events, lasting about seven days. From our own limited experience with this dozen cases, together with that of others with more than 140 cases, it would seem that the value of serum, either for therapy or prophylaxis, is highly doubtful. Many, many cases of proved gas gangrene have been cured with radiation alone. Tetanus antitoxin, of course, should be given as indicated.

Two of our cases died. One was so severely injured that his death might be attributed to shock and trauma. His arm was amputated at the shoulder by his initial injury and he had bled profusely before being hospitalized. Gas was present beneath the skin of the entire upper trunk on one side. He was treated with a radiographic machine which could not produce sufficiently penetrating rays for effectiveness in the trunk. He was treated both in the morning and again the same evening. The second death occurred in a middle-aged man who had a gunshot wound in the upper thigh. He developed his disease on the second day and was radiated both on the affected area and above the inguinal ligament. He died promptly. Both these cases were large men. Both were radiated with hospital diagnostic x-ray machines that have been calibrated for superficial therapy. It is possible that neither received adequate treatment inasmuch as with a peak of 50 kv. and 2 Al. filtration the effective dose much below the surface would be small. At least one of these cases (the latter) might have been salvaged.

For many other infections the value of x-ray therapy is well known, though not as widely practiced as is warranted. Among the commonly seen infections in which x-ray treatment is of proven value are: boils, carbuncles, warts, erysipelas, acne, ringworm, certain cases of sinusitis, sometimes acute mastoiditis. It is specific for erysipelas. The panacea, sulfanilamide, and its derivatives, of course, produce good results too. But they cannot be given indiscriminately with impunity, as is being brought to attention by the few cases of blood disturbances now being reported. Also about 10% of all persons taking either of these drugs react in some unfavorable manner. There is absolutely no risk from a properly applied dose of x-ray in amount sufficient to control most superficial infections, especially gas gangrene.

We have treated several cases of chronic sinus infection. Results have so far been indifferent. All had had long and varied treatment, including surgery in some cases. Five of them were improved by radiation. The sixth is uncertain and is still taking treatment. One patient, a boy of 12 years, has been completely relieved from asthma for more than a year and is at present well. Relief of pain is the greatest service done these patients. While every case of sinus infection is not suitable for radiation a few are and these should have the benefit of a trial.

It must be emphasized that the efficacy of radiation in the control of infections depends entirely upon the alacrity with which it is applied—the earlier the better! Most infections in the classes here discussed can be surely controlled when radiated within a few hours of onset. Both gas gangrene and erysipelas should be treated as emergency measures! Boils and carbuncles, especially when on the head and neck, should be radiated without delay! Advanced infections are more or less self-limited, depending on drainage and cleanliness for healing, and radiation is of limited, though some value.

The technique followed by us is mostly with 120 kvp. and 5 ma. Filtration varies but mostly is from 1 to 3 mm. al. For cases of gas gangrene involving heavy structures such as the thigh and trunk we have used 200 kvp. and 0.5 cu. + 1 al. filter. Dosage is usually 100 to 200 r. (measured in air) and is repeated in 12 to 24 hours, depending upon the condition and response of the patient. When the temperature is normal treatment is not usually repeated before a rise. We have found that 200 kvp. and 120 kvp. are of equal value in the treatment of gas gangrene.

Just what happens when x-rays are applied to tissue diseased by infection is not definitely known. Many theories have been advocated but none substantiated beyond refute. None of them will be discussed here. As far as infections are concerned the use of radiation is empirical, *but it does work*. In the case of gas gangrene it works when nothing else will.

Why then, is it not good medicine in any infection that is potentially dangerous, such as gas gangrene and erysipelas, carbuncles, boils, etc., to treat them with radiation as prophylaxis? There is no risk and delay until one's suspicions are confirmed is a loss of valuable time. Immediate treatment is cheap and may keep the problem that of treating an infection rather than heroically trying to save an already jeopardized life.

CONCLUSIONS

1. X-radiation is a specific for gas gangrene and erysipelas.

2. Early treatment is essential and should be repeated when necessary.

3. Prophylactic x-radiation of potentially dangerous infections is cheap and without risk.

4. Amputation is *not* a therapeutic procedure for gas gangrene.

First National Bank Building

Treatment of Cancer of the Breast by Combined Irradiation and Operation

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THE following plan for treatment of cancer of the breast and the ideas on which it is based are presented with some hesitation, realizing that they are open to criticism and that the ultimate results of treatment of mammary cancer have been anything but encouraging. However, I do not beg indulgence, but rather criticism; I am quite open to conviction that I am wrong, even though the results, both good and bad, of this method and observations on the nature of the recurrences seem to indicate that its basis may be correct.

With one statement, I think, you will agree, viz., that surgical attack on cancer has reached its anatomical limits and that it is futile to expect better results by more extensive removals of areas of lymphatic drainage. I do not know whether you will agree to the converse, which I think holds good not quite so certainly, but fairly well, for many cancers, viz., that many very extensive operations have not proved justifiable; that if the cancer has already spread into the lymphatics extensive operations are futile, for we cannot get ahead of this spread; that if it has not spread into the imphatics they are unnecessary, for a more local, decently wide excision will accomplish a cure. There are some abandoned procedures that speak for the correctness of this statement. For instance, the Wertheim operation for cancer of the cervix and the extensive Halstead operation for cancer of the breast, with wide excision of the skin and Thiersch grafting. Extensive abdominoperineal operation with permanent colostomy for cancer of the rectum frequently falls into this category.

It may be well to outline the details of the method before discussing the results. Needless to say, the patients have all been examined from head to foot and have been questioned with care. Those complaining of rheumatism or pain in the back have had x-rays of the spine and pelvis; the others have had chest films, the cost of a complete bone survey being too great for most patients. Internal metastases, lenticular nodules in the skin and carcinomatous strands in the skin lymphatics have precluded operation, except occasionally as strictly palliative operations for four fungating tumors; the presence of palpable supraclavicular glands has usually, but not always, been held as a contraindication to operation. Those patients who were chosen for operation have been subjected to very moderate preoperative irradiation of the mamma, the supraclavicular region and the axilla, each field receiving approximately 600 to 900 roentgen units, or some 1800 in all, with some overlap from the separate parts. Treatment has been given usually in four, sometimes three, sometimes five sessions, mostly by the late Dr. Rehfisch and Dr. Garland, who have been liberal enough to give up their own ideas of what was best in order to fall in with the general plan of treatment. One-fourth grain of phenolbarbital was given three times a day to prevent occasional slight nausea; the patients were ambulatory and not at all upset during these short preparatory x-ray sessions.

These treatments were not given with an idea of influencing the cancer itself, for they were confessedly quite inadequate as cancer treatments, but rather of sterilizing prophylactically the more distant fields into which the proposed operation might scatter cancer cells.

James B. Murphy and his co-workers of the Rockefeller Institute showed in a series of papers published some 20 years ago that implants of mouse tumor refused to grow in skin that had been previously subjected to mild doses of roentgen irradiation, while similar or heavier doses applied to the excised tumor itself not only did not prevent its growth when reimplanted, but if anything caused it to grow more rapidly. This destruction of cancer implants seemed to accompany the lymphocytic infiltration that follows after irradiation; the destruction was most morked when implantation was done at the height of the roentgen reaction, i. e., about a week after irradiation. It is true that their experiments held good only for intracutaneous implants and that irradiation had no such effect when implantation was done into the subcutaneous tissues. However, it seems as though if previous irradiation protects the skin against cancer implants and if this protection is due to a lymphoid reaction, that irradiation of other lymphoid tissues (the lymphnodes) may excite their defenses in the same way. It was thought, with these experiments in mind, that cancer cells lying free in the lymphatics might land in sterile soil if they were scattered and caught up in the lymphnodes during operation and might refuse to grow. Perhaps this same irradiation may even be sufficient to keep within bounds minute deposits of cancer cells in more distant glands and lymph spaces, supraclavicular and mediastinal. It was only mild doses (one erythema dose) that protected against cancer implants in Murphy's experiments. Heavier doses broke down the defense and rendered the animals more susceptible.

Soon after conclusion of the roentgen sessions, usually the next day, at any rate within a week, the patient is admitted to hospital for operation. She is given sodium amytal, 6 grs. by mouth one

* From the San Francisco Hospital, Stanford University Surgical Service.

Read at Southwestern Medical Asociation, El Paso, November 10, 1939.

hour and M. S. gr. ½, hypodermically a half hour before operation and is operated upon under nitrous oxide anesthesia. Cyclopropane and ethylene are not used on account of the danger of explosion. An adequate, but not an immoderate amount of skin around the tumor is circumscribed with the electric knife; the nipple, of course, is included. This elliptical, or round, or polygonal incision, as the case may be, is prolonged by adding three limbs to it, two running downwards medially and laterally, and one upwards toward the clavicle. The skin flaps outlined by the three limbs are reflected by retracting them with sharp clawed retractors or towel clips and rapidly burning through the subcutaneous fat with a hot Percy cautery. They are held reflected by clipping them to the surrounding drapes or the skin with towel clips. From now on all dissection is done with a massive Percy cautery.

The cautery is used with the idea that its heat may destroy not only cancer cells with which it comes in contact, but also those at some distance from it. It has the additional advantage of making the operation practically bloodless. Visible vessels are dissected with it and severed with it between two mosquito clamps; minuter ones do not bleed and need no ligation. It has, as Voldmann said of his sharp spoon-curette, human intelligence. In distinction to the electric knife, which burns a hole into any large vessel it touches, the Percy cautery may be used with impunity in dissecting out the auxiliary vessels and removing their sheaths. It will not perforate them unless while burning off the sheath one includes the vessel wall in the tissue forceps and pulls it out into a teat, nor will it cause a thrombosis. It will not damage the nerves unless one burns them too long and persistently, when it may cause a painful neuritis. In short, it makes an ideal dissector provided one is always mindful that it is gentle retraction of the tissues that causes the heat to cleave them, and does not attempt to burn them through by main force, or by the weight of the instrument itself.

Once the skinflaps have been outlined dissection is begun by freeing the edge of the pectorals. For the last few years these muscles have not been removed, but have been freed of their overlying fat and fascia with the cautery, the surface being rapidly seared with the flat side and the hilt of the instrument. It was thought that the incidence of massive edema and elephantiasis of the arm and hand might be lessened if the pectorals were left; and indeed, excessive swellings have not occurred since leaving them. It was thought, on the other hand, that leaving them was justified, provided the axilla could be adequately reached, for recurrences in the muscles themselves are practically unknown. In fat women or in difficult dissections the lower portion of the major pectoral is removed, the upper part being allowed to remain. After the pectoral edge is free, dissection proceeds from above downward. The axillary nerve-vessel bundle is at once exposed with the cautery and every small vein and artery branch carefully dissected, clamped close to the vessel and severed betwen two clamps. With the upper row of clamps as a retractor the vein is gently lifted up or dissected, small arterial branches are similarly freed and severed. After the vessels are clear, dissection is rapid. The axillary fat drops away in front of the cautery almost by itself. The long thoracic nerve and vessels are excised if the axilla appears at all suspicious; if not they may be dissected free and allowed to remain. The intercostohumeral nerve anastomosis receives attention and is examined for the presence of suspicious infiltrates. It is excised with the cautery. After the axilla is clean the breast with the axillary contents attached is lifted up gently and rapidly freed from the rib cage with the cautery and removed. The wound is then carefully revised, the axilla gone over and superfluous fat that may have been left on the skin flaps removed with the cautery. If now the axillary glands have been involved, or if suspiciously friable tissue has been found, extending along the intercostohumeral anastomosis into the chest, or upwards under the clavicle, the reflected skin flaps are protected with sheet lead, the wound is covered with moist compresses and the patient is taken to the x-ray room, where the operative wound is subjected to a wide field of heavy irradiation, either unfiltered or delivered through 1 mm. of aluminum at about 33 cm. target distance. From 2500 to 3500 R. are administered. The ray is centered toward the areas that appear most suspicious; medially, if the intercostal anastomosis was suspicious, or more upward if supraclavicular extension seemed more likely. This treatment takes about 12 to 18 minutes with the equipment at hand. During it anesthesia is discontinued; the previously administered sodium amytal and morphine are enough to keep the patient asleep.

This heavy intraoperative irradiation, used in cases with demonstrable axillary involvement, has an intent quite different to that of the mild preoperative course. Preoperative treatment is given with the idea of making the fields into which cancer cells may likely be scattered during operation unfit for their future growth. It is kept moderate in order not to break down the lymphoid defense and not upset the patient. It is not prolonged, so that the territory in which one is to operate may not be scarry and stiff and likely to break down later. The massive dose delivered during operation is sufficient, in theory at any rate, to kill cancer cells traversed by it; it is a dose much heavier than one would dare give at one time through the skin. It is purposely made as heavy as time and the apparatus at hand will permit. Necrosis and sloughing are not to be feared; fascia, muscle, nerves, vessels that fall into the field are notoriously resistant to x-ray necrosis; the skin is kept shielded and out of the way. Even though aseptic necrosis may occur in the deeper soft parts later, these are protected by normal skin from ulceration and sloughing.

This portion of the operation is considered essential in patients whose axillae are suspicious; when it is concluded they are returned to the operating room; the skin edges, which had been severed with the electric knife, are excised with a scissors or a scalpel, tabs of subcutaneous fat, which had been seared with the Percy cautery, are removed with the scissors and the wound is closed with silkworm gut and silk, or skin clips. A split Dakin's tube is inserted into the axilla through a small separate stab, or through the lower part of the original incision. A firm dressing of absorbent cotton is held in place with adhesive or with elastoplast. The large skin flaps are poorly nourished and heal more or less like a full thickness graft. At times, if the cautery has come too close to the skin, a small, round aseptic eschar forms at one place or another; rarely does it exceed a 25-cent piece in size. Occasionally a small Thiersch graft or pinch graft has been used to hasten healing of this area after the eschar has separated. Usually it has healed by itself.

The operation is not unduly lengthy; 1½ to 2 hours are usually sufficient, including the time of irradiation, during which gas anesthesia is stopped; there has been no sepsis or extensive necrosis following it; patients are usually up in 4 or 5 days and out of the hospital in a week or so.

POSTOPERATIVE TREATMENT

The drain is removed in 3 or 4 days; the rest of the dressing remains for about 10 days; the last sutures at the junction of the three branches of the incision, where there is considerable tension, are not removed for 2 or 3 weeks. If they are removed early the wound may part. Removal of the intervening sutures is begun in 8 or 10 days; a few of these are allowed to remain until there is no more tension on them.

The wounds have all been closed without free grafting; at times, it is true, under considerable tension. We have felt, as Scott says, that cases that cannot be closed without skin grafting are rarely suitable for operation. Lenticular metastases and carcinomatous lymphangeitis of the skin have been considered as contraindications. No matter how widely such patients may be flayed, enough skin cannot be removed to prevent cutaneous recurrences.

You will note that although no wide areas of skin were removed at operation, the percentage of local recurrences has been very small. Most of the deaths were due to distant metastases in the bones, the pleura, the lung.

The absence of skin recurrences or lenticular metastases even in patients whose cancers reached the corium has fully borne out Murphy's experiments on the value of skin irradiation as a protection against implants.

Not only the skin but other areas of lymphatic tissue seem to have been protected by this pre- and intra-operative irradiation. Thus several patients were found to have metastases in the higher cervicular lymphnodes, lying above the irradiated field, while the closer original nodes (supraclaviculars) remained free.

Death has been due to pleural and pulmonary metastases and especially to distant bony metastases, against which the x-ray offers no protection.

A patient now dying of recurrence, 6 years after operation, has a massive intrathoracic carcinoma, filling half the chest; this has grown out from the from the inside out, but the skin itself and the chest in various places and has pierced the skin axilla, which was subjected to heavy intraoperative irradiation, have remained free.

You will note that postoperative irradiation has not been mentioned. It has seemed to me that it has no value, except for the relief of pain in osseous metastases. It failed to check the growth of recurrences in lymphnodes of patients in whom it was tried; it seemed rather to accelerate the rate of growth, to make the patients needlessly sick and to hasten their end. It does, however, relieve the pain of bony metastases and apparently hold them in check for long periods—years. The dosage for bone lesions is small, 500-1000 R. Higher doses, I think, break down the defense, as they did in Murphy's mice, rather than afford relief; when small doses have proven ineffectual larger ones have been equally so; nothing has been gained by increasing them.

There have been a few deviations from this plan, which has been constantly followed for 20 years. In a very few patients with small localized nodules, mostly medical women, doctors and medical personnel, I have ventured to excise the tumor locally, not removing the whole breast, because these patients were so terrified at the thought of having cancer that they would not have submitted to operation at all had they thought they had one. Two have remained well, one has skeletal metastases. The axillary lymphnodes have remained free, but she has enlarged cervicals at the level of the thyroid. It is too soon to recommend local excision; in some instances, however, the local excision of small isolated nodules not over 1 cm. in diameter, preceded immediately by a moderate course of irradiation, may be justifiable. These small cancers are often encountered after a mistaken diagnosis of benign tumor and have had on preoperative treatment. A moderate course of postoperative irradiation is then in order.

SUMMARY

A method for treatment of breast cancer is described which includes:

1. Preoperative radiation of the breast, axilla and supraclavicular regions.
2. Removal of the breast, dissection of the axilla with a Percy cautery.
3. Intraoperative delivery of a heavy dose (2500-3000 R.) of unfiltered or lightly filtered x-ray to the open wound for cancers suspicious of axillary involvement.

Stanford University School of Medicine.

Extra-Diabetic Uses of Insulin

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WITHIN recent years medical literature has carried reports of great interest concerning the use of insulin in such conditions unrelated to diabetes mellitus as the psychopathic states and malnutrition. We, in the general practice of medicine, have frequently observed in our diabetic patients how often such complications as "colds," infections, skin disorders, pneumonia, and even early gangrenous tendencies have been favorably affected by proper insulin usage. This latter observation caused us to wonder if there were not some bases for the use of insulin in somewhat similar conditions in the non-diabetic. We, therefore, set forth to search the literature with this point in view, and we were indeed amazed to find the overwhelming favorable reports within recent years. The following is a brief resume of our findings.

PSYCHOPATHIC DISORDERS

Crowley[1] describes four psychiatric conditions in which insulin has proven to be a valuable therapeutic adjunct: schizophrenea, depression states, acute alcoholism, and drug addiction.

To Dr. Manfred Sakel[2] of Vienna, we are indebted for the development of this method for schizophrenia. He first reported its use for this condition in 1933 after finding that insulin benefited the mental and emotional states of drug addicts. He reported 70% to 80% complete remissions with early cases of schizophrenia as compared to the spontaneous remissions rate estimated variously at from 25% to 50%. The insulin shock treatment is most effective in early cases such as those revealing symptoms of less than one year's duration. The response of the paranoid and catatonic types are most gratifying.

Freudenberg[3] describes the mechanism of cure in the schizophrenic by stating that insulin therapy induces the oxybiotic processes necessary for detoxification of the toxic products which collect from protein metabolism as a result of a primary disturbance in cerebral respiration due to some lack of oxygenating substances. It is also stated that insulin may irritate the nerve cell membranes which result in an increased exchange between the cells and their surroundings.

In acute alcoholic intoxication[4] insulin given early will cause the patient to "sober up" immediately with practically no "jittery" feeling. Robinson's report[4] of nine cases reveals that this is an extremely effective mode of therapy for acute alcoholism. He states that within 7 hours after the onset of treatment there was a marked clearing of symptoms of hallucinosis, delusions, disorientation, and mania when present. Insomnia disappeared and the first dose caused considerable degree of hunger and the patient will readily take fluids and nourishment. The dosage recommended was U xx, repeated in 3 hours. Orange juice was kept at the bedside to overcome untoward reactions. The average length of time from administration to complete resolution was 3.3 days.

The severe withdrawal symptoms in narcotic addicts (morphine, heroin, etc.) are effectively mitigated by this therapy.[5] Hirsch[6] found a low percentage of blood sugar during the withdrawal period. Anton and Jacobi[7] used intravenous glucose and insulin to facilitate more complete utilization of sugar.

In acute and chronic barbiturate intoxication, Lambert[8] mentions the use of insulin along with glucose in comatose patients.

Cases with manifestation of cerebral arteriosclerosis are favorably affected, according to Beale.[9]

MALNUTRITIONAL STATES

Pitfield[10] is credited as having first reported the use of insulin in malnutrition. The gratifying improvement in appetite and gain in weight due to the improved carbohydrate metabolism and lowered blood sugar is well known. Knighton[11] reports of its use in overcoming anorexia and malnutrition in conditions such as tuberculosis, asthenia, and infectious diseases. Its use in coeliac disease and in cachexia of malignancy is evident. Pitfield[12] reports extremely favorably results in athreptic infants, myasthenia gravis, and tuberculosis. In undernourished children it is of great value in speeding up the rate of gain where there is not satisfactory response to the usual hygenic and dietary regime. Higgons[13] recalls that it is of particular value in these children in checking the weight loss due to chronic low grade infections with fever. Bowen and Lockie[14] report marked improvement in eight cases of chronic atrophic arthritis in women between the ages of 18 and 66 years who were severely undernournished. Pneumonia, typhoid fever and other debilitating illnesses are readily benefited by improvements of the nutritional state.

CARDIO-VASCULAR DISEASES

When glucose is given in conjunction with insulin in cardiac conditions the nutrition of the myocardium is improved. The glycogen storage is increased when glucose and insulin is given in all the muscles and in the liver, but proportionately more in the heart muscle than in the skeletal muscles. Nichol[15] reports 20 cases of cardiac involvement including coronary occlusions, some with congestive failure and arterial hypertension, mitral stenoses due to rheumatic heart disease, and cardio-neuroses. The electrocardiograph revealed no untoward effect following insulin-glucose therapy, which, of course, was used as an adjunct to other

therapy. Nichol reports other authors in his article as stating that very gratifying results were obtained in congestive heart failure, angina pectoris, coronary sclerosis with definite improvement of rythm, dyspnoea, pain diuresis, and lowering of arterial hypertension, and increased venous pressure. Kohne[16] reports immediate improvement in a case of coronary thrombosis in which 50 cc. of 50% glucose and insulin U v was given daily for 9 days. Definite improvement of the "coronary T" wave in lead II was shown in the electrocardiographic tracing. Knighton[11] also reports favorably of this therapy in myocardial insufficiency and coronary thrombosis, but warns against the indiscriminate use of insulin and consequent reduction of glycogen in the heart muscle to such a degree below the optimum as to precipitate a typical anginal attack. He states also that arterial hypertension associated with endocrine dysfunction as well as obliterative lesions of the vascular system (Berger's disease) frequently respond to this treatment. Beale[9] states that the group of diseases in which obliteration of the blood vessels is a factor is worthy of trial. Response was noticed in such conditions as arteriosclerotic gangrene, angina pectoris, cerebral arteriosclerosis, and thrombo-angiitis obliterans. He also incidentally mentions bed sores and chronic leg ulcers. The rationale which he sets forth is that increased carbohydrate metabolism will favor dissolution of fat deposits in the inner walls of the peripheral vessels.

GASTRO-INTESTINAL DISEASES

Acute dilation of the stomach was successfully treated with insulin and glucose together with gastric lavage by Mallory.[17] Gastric ulcer and gastritis cases were rendered symptomless after 3 to 4 weeks of treatment, according to a report by Roller.[18] The latter states that if after 4 weeks the roentgen findings are not favorable it is advisable to continue insulin for a longer period. Patients remain symptomless even after insulin is discontinued. The dosage varied in each individual case, but Roller's average dosage was Ux in the morning and Uxv to xx at noon and in the evening. The patients received an increase of carbohydrate in their dietary regime as it was desirable to have them "overfeed" themselves. Wolf[46] writes that insulin has an alkalinizing effect upon gastric acidity, brings about a normalizing of the motility and secretion of the stomach, and encourages cicatrization.

Non-mechanical intestinal obstruction[23] was greatly improved when Ochsner, Gage and Cutting found greater stimulation of the intestinal musculature when insulin and glucose was given.

Its use is also referred to in hemorrhagic colitis.

At this point one may well include certain liver conditions in which this form of therapy was utilized. Particularly gratifying results in liver degeneration due to arsenic poisoning was reported by Mosonyi,[19] cirrhosis of the liver by McCabe and Hart,[20] acute and subacute yellow atrophy by Buresch,[21] and hepatitis associated with cholelithiosis by Gunn.[22] Mosonyi's[19] account of three cases of dehydration due to arsenical poisoning reveals that when insulin and dextrose are used the diarrhea and therefore dehydration is definitely controlled within 8 days. If this therapy is discontinued too early the diarrhea returns. He states that the arsenic has definitely influenced the carbohydrate metabolism and insulin given with glucose has a favorable effect on the liver damage and favors mobilization of liver glycogen and thereby inhibits the catabolism of sugar and improves liver function.

Insulin given in jaundiced patients will shorten the period of jaundice and reduce the itching.[50]

ENDOCRINOPATHIES

In hyperthyroidism, insulin is of benefit because of its antagonistic action with thyroxin on blood sugar and general metabolism. Insulin aids to stabilize weight and basal metabolism and is of great value in those cases of hyperthyroidism with rapid uncontrollable loss of weight.[24] Parathyroid deficiencies show synergistic response when insulin is used in association with calcium, parathormone, and vitamin D.[25]

Infantile sexual development is given a striking acceleration by the use of insulin, according to Williams,[26] who reports a case of an 8½-year-old girl who responded almost immediately in her body growth and sexual development. Stimulation of the mammary glands, ovaries and uterus was quite noticeable. Discontinuance of insulin was followed by prompt regression of secondary sexual phenomena. Felderbaum[27] suggests that infantilism due to failure of the alpha cells without coexisting beta cell atrophy (diabetes) may occur.

Insulin has been found to be an effective aid in the treatment of endocrine sterility. Genital function is improved if 10 units are given in the morn- and night.[40]

Ovarian disorders causing metorrhagia, menorrhagia and dysmenorrhea have also been mentioned as well as mild cases of Simmond's disease.

OTOLARYNGOLOGIC CONDITIONS

Progressive deafness due to sclerosis of the vessels of the middle ear frequqently shows improvement under this regime was stated by Beale,[28] who also reports enhancement of anti-luetic therapy with insulin in syphilitic lesions of the nose, throat and ear. He also advocates its use in edema of the pharynx, uvula, glottis and larynx. Jarvis[29] also mentions the use of insulin in luetic ulcerations of the throat and in pharyngeal and laryngeal edema. Jarvis states that the common "colds" can be prevented by the use of insulin (3 units) given every 10 to 15 days, and symptoms can be relieved by 3 units given every day for 3 days. He advocates small doses of insulin (3 units) in varying time intervals from daily to twice weekly in such conditions as mucopurulent secretions within the nose, nasal polyps (effects dehydration) acute otitis media, chronic suppurative otitis media, and furuncle of the external auditory canal. Ersuer

and Pressman[29] also report a series of cases of post-operative mastoiditis with delayed healing and a persistent discharging fistulous tract which responded with a rapid decrease in drainage, now granulation formation, and healing under insulin therapy.

Other conditions suggested for insulin trial are apthous stomatitis, anosmia, paradentitis, and peridentosis.

ALLERGY

Bronchial asthma treated by Bartelheimer[30] with hypoglycemic shock favorably effects the asthmatic paroxism. The effect may not be immediately noticeable, but improvement is usually present over a long period of time. There is a definite increase of the vital capacity of the lung during the insulin shock period.

Caven[31] reports two cases of uriticaria which failed to respond to the usual methods. One case which was associated with sensitivity to wheat and eggs showed localized reaction of swelling, redness and intense itching when zinc-protamine insulin was used. However, when regular beef insulin was substituted, improvement was evident without untoward reaction.

MALIGNANCY

We are naturally skeptical of reports of improvement or cure of cancer with this method of treatment. However, such instances are reported in the literature and we are including them here for the sake of completeness. Beale[25] is quite enthusiastic with the results he obtained in cases of a basal cell carcinoma of the cheek, which was reduced in size, improvement of hyperkeratosis of the cheek and entire disappearance of a suspicious squamous cell carcinoma of the lower lip. Insulin was used in conjunction with calcium, viosterol, parathormone. Regression and disappearance of Jensen's sarcoma has also been mentioned.

There is no doubt that insulin plus a high carbohydrate diet in patients with malignancy is desirable in order to maintain nutrition.

Beale[25] suggests the use of insulin for the purpose of relieving pain of cancer, since it has been shown that there is an increase in the blood calcium 1½ to 2 hours after injection and an increase of blood calcium minimized this type of pain, according to Behan.[32]

DERMATOLOGIC LESIONS

Hyperkeratosis, basal cell carcinoma, squamous cell carcinoma, luetic lesions, urticaria, decubitus ulcers and chronic leg ulcers were briefly mentioned in this paper. Payne's[33] report on this treatment of varicose ulcer is interesting. Psoriasis and scleroderma[5] have also shown improvement. Scattered throughout the literature are reports on cases of crural ulcers treated with an insulin ointment, furunculosis, Quinke's edema, pellagra, chronic eczema, particularly that associated with varicose ulcer.

INFECTIONS

Conditions such as the common "cold" otitis media, pyodermas already have been dwelt upon. Gunn[22] reports improvement in pneumonia and osteomyelitis. Weight loss in children with chronic low grade infections were checked.[13]

Under this caption we wish to mention references to the use of insulin arthritis. Howitt and Christie[34] report 20 cases with improvement of the nutritional state and alleviation of stiffness and pain in the joints. No radiological changes were noted, however. Bowen and Lockie[14] also report definite improvement in eight cases of chronic atrophic arthritis associated with an improvement of nutrition.

The extreme toxicity associated with diphtheria is greatly benefitted by insulin and glucose administration. Schwenkter and Noel[35] report recovery of 13 of 14 critical cases.

SURGERY

Pre-operative non-diabetic acidoses showed a more rapid disappearance of ketoses when treated with insulin and glucose than when treated with glucose alone. This type of therapy is particularly indicated in cases of pre-operative acidosis due to starvation and vomiting as in acute intra-abdominal surgical conditions. A poor surgical risk is changed rapidly to a fair or good one. Post-surgical shock was greatly improved with rapid cessation of typical clinical symptoms of surgical shock. Post-anesthetic toxemia as evidenced by acetonuria, acetonemia, acidoses, vomiting, flushed face, dry lips, weak rapid pulse, restlessness and unconsciousness shows rapid response. Eight such cases were reported by Fisher and Mensing.[36]

Klaften[37] used an insulin preparation by local application by brushing and tampon on cervical erosions with encouraging results.

Fractures produced experimentally in rabbits by Stuck[38] showed a tendency to more advanced healing at 2 to 4 weeks by microscopic study in the animals receiving insulin.

MISCELLANEOUS GROUP

Myasthenia gravis has shown satisfying clinical results with insulin therapy. Robinson[39] was very enthusiastic in his report. Pitfield[12] states that the etiology lay in the metabolism of the glucosides of the muscle fibers as shown by a biopsy of the deltoid muscle. The case which he reported was greately benefited.

Among a host of other entities mentioned in the medical literature we also find toxemias of pregnancy—especially hyperemesis gravidarum, multiple sclerosis, chronic nephritis associated with azotemia, etc.

CONCLUSION

A review of the literature is presented revealing the widespread therapeutic use of insulin in practically every medical field.

The authors of this article are not in entire accord with all the reports presented, as some are evidently over-enthusiastic. However, for the sake of completeness all aspects were included.

(Continued on page 172)

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D. F. HARBRIDGE, M. D.

At the recently concluded session of the Arizona State Medical Association, held in Tucson, April 18-20, 1940, Dr. D. F. Harbridge, of Phoenix, succeeded to the presidency of the Association, replacing Dr. Charles Smith, of Nogales.

Dr. Harbridge was graduated from the University of Pennsylvania with the degree of Doctor of Medicine. He interned at Saint Mary's Hospital in Philadelphia. Early in his career he became associated with the teaching staffs of several eye hospitals and departments of ophthalmology in Philadelphia. At one time he was a member of the clinical staff of Wills Eye Hospital, a member of the staff of Saint Mary's Hospital and Saint Agnes' Hospital, Philadelphia. He organized and became chief of the eye department of the Chester Hospital, Chester, Pa. For a time he was a lecturer in ophthalmology at the Philadelphia Polyclinic, which is now part of the University of Pennsylvania.

Before and since coming to Arizona to establish a private practice of ophthalmology, Dr. Harbridge has been markedly active in the work of organized medicine. He has been president of the Delaware County (Pennsylvania) Medical Society, secretary of the Chester (Pennsylvania) Medical Society, president of the Mericopa County (Arizona) Medical Society, delegate to the American Medical Association, secretary and treasurer of the Board of Managers of SOUTHWESTERN MEDICINE, and secretary of the Arizona State Medical Association. The latter office was held by him for nearly a quarter of a century.

The new president has been an active author in his field. He has published 35 contributions in current medical literature. He is the author of the chapter on Tumors of the Eye in the *American Encyclopedia of Ophthalmology*. At one time he was editor of three chapters in the *Ophthalmic Year Book* under the headings of Conjunctiva, Tumors and Toxic Amblyopia. He has been for many years abstractor of the *British Journal of Ophthalmology* for the *American Journal of Ophthalmology*.

Dr. Harbridge is licensed in Arizona, New Jersey, Pennsylvania, Delaware, Wisconsin and California.

Professional memberships include the following: American Medical Association, Arizona Medical Association, Southwestern Medical Association American Ophthalmological Society, Western Ophthalmological Society, Association for Research in Ophthalmology, American College of Surgeons, honorary member Philadelphia County Society, conferred in 1935. He has been certified by the American Board of Examiners in Ophthalmology.

Dr. Harbridge assumes the presidency of the Arizona State Medical Association on the eve of the fiftieth anniversary of the society.

SICK MAN'S CHOICE

Physicians have contended that it is a fundamental right of the sick man to choose freely his personal physician. Most of the hot-eyed missionaries of the Blessed Day have minimized the desirability of this characteristic of American med-

icine. With labored and strained logic it is pointed out that the phrase "free choice of physician" is but a shibboleth, of out-moded value and use to modern society.

Sickness is a highly personal event. No one else can share the sick man's pain, his anxiety as he walks alone in the dark paths. If, in his loneliness, he feels that only one physician above all others can understand, can make him well again, then in the name of all common sense he should have the services of that man. No substitute, cheap or free, can possibly or rightfully take part in such a situation.

America's physicians have built an unsurpassed system of medicine based in part on the idea of free choice of physician for everyone. Which statement ought to help explain their grim insistence on the observance of that principle in any scheme of medical service to be set up now or ever. Organized medicine has clung to this concept, advocated it, defended it with all its might.

Recently the monthly *Forum* published an anonymous article reciting a harrowing tale of a wife and mother, "I Can't Afford to Be Sick." After a fiction-like series of mishaps, the author says: "My experience casts a white light on the problem of state or group medical care. I see clearly that the most important thing is to preserve, somehow, the principle of competition for the patient's favor. The doctor who can deliver the goods professionally and personally must get the business as he does now. His confreres who are starving must continue to starve, in the best interest of society."

And that says in different words just what American medicine means when it declares that the patient shall have the physician of his choice. At last some of the sick folks are becoming articulate about this controversy. And their desires will shoot down the gaudy trial balloons up in the high clouds.

FREEDOM OR LICENSE?

The dark forces of ignorance and prejudice, despite the efforts of the more literate, still plague the civilized world, at odd times and in the most unexpected places. Here is a recent case study:[1]

"Half the first grade of Crockett School is down with the mumps, says the Herald-Post, which sometimes gets its facts straight. Dear, dear, this is awful. The mumps epidemic hit the first grade, knocking out 24 out of 41 pupils.

Let's immunize the whole city against mumps!

If we are to immunize everybody under 18 against diphtheria—at a fee to the family doctor of $1.50 to $2 per person, why stop there? Especially when there's mumps around.

To be sure, Dr. L. T. Cox, City-County Health Officer, says there are only 26 reported cases of mumps in the city. But that's all at one time, whereas we have had only about 60 cases of diphtheria through the whole year. If we have 26 mumps cases today, we may have another 26 two weeks hence, and then another 26, and so on ad infinitum.

Let us immunize against mumps by all means!

"There is no more mumps than usual at this time of year", says Dr. Cox. "Mumps is like measles, it comes more in the spring."

Now there's something else—measles. We have scores of cases of measles every year here in El Paso. And scarlet fever—that's another. And influenza causes more illness than all the rest put together. Let's immunize inividually and separately against all of them. If there aren't immunizing agents for some of them, let's invent 'em.

At $1.50 to $2 a shot it's a good racket.

It has been said that advertising in daily newspapers is written down to the level of the 12-year-old mind. The intellect that knew no better than to give the above birth in the terrible permanency of cold print could not have been aiming higher in his reckless accusations than to reach his fellows in the 12-year mental group.

We don't know of a health department or an individual physician in Arizona, New Mexico or El Paso that would not give his services gratis to any deserving case brought in. If this be a "racket", then there is something basically wrong about all concepts of human ideals and ethics. To all but the reckless, ignorant few it would seem that the world today needs more such "rackets", a few more idealists than bigots.

Is this clinical case one of freedom of the press, or just mere license?

(1) EL PASO TIMES, May 8, 1940.

THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association advocates:

1. The establishment of an agency of federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.

2. The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such need.

3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.

5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.

7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.

8. Expansion of public health and medical services consistent with the American system of democracy.

Special Section

Arizona State Medical Association

PRESTON T. BROWN, M.D., *Associate Editor*
403 Professional Bldg., Phoenix, Arizona

OFFICERS FOR 1940-1941

The following are the officers for the Association for 1940-1941, as elected at the recent Annual Meeting:

President (elected in 1939)....D. F. Harbridge, M.D.
Phoenix
President Elect.....W. Paul Holbrook, M.D.
Tucson
Vice President.....L. R. Kober, M.D.
Phoenix
Secretary.....W. Warner Watkins, M.D.
Phoenix
Treasurer.....C. E. Yount, M.D.
Prescott
Councilor Northern District....Geo. O. Bassett, M.D.
Prescott
Councilor Southern District....Dan L. Mahoney, M.D.
Tucson
Speaker of the House.....H. D. Ketcherside, M.D.
Phoenix
Delegate to the American Medical Association
.....Harold W. Kohl, M.D., Tucson

The outgoing President, Dr. Chas. S. Smith, automatically becomes a Councilor-at-Large for a term of three year. Holdover members of the Council not subject to election this year are: Dr. Geo. C. Truman, Councilor Central District; Drs. C. R. Swackhamer and Hal W. Rice, Councilors-at-Large, and Dr. John E. Bacon, Chairman of Committee on Medical Defense.

COLDS—CAUSED BY OVEREATING

H. T. BAILEY, M.D.

Much has been written and said about colds and the complications caused by them, but with your permission I will bring up this old subject by a different approach.

Go with me on a long train journey, say from Phoenix to New York, or from Boston to San Francisco or any place where we are on the train for two or three days. The first day out we eat as heartily as we do when at home at work; the next day we are not hungry but we eat anyway—perhaps from habit.

In July and August, 1939, I was in Mexico City. At this time of the year it is very damp there because of rain almost every day. The high altitude is purported to slow digestion from three to four hours to six to eight hours. Anyway the physicians there claim about 80% of tourists have either a severe cold or a gastro intestinal disturbance soon after they arrive. The people who ate two light meals a day had little or no trouble. Some of our party ate only two light meals a day and some days only one. Even those who had an arrested chronic sinusitis continued to stay in pink of condition on a light diet while those that ate heavily and especially of tropical fruits, such a mangos and papaya, had indigestion with its many complications and a severe coryza. I saw many cases of acute sinusitis and much tuberculosis. The lack of exercise causes a sluggish condition of the alimentary tract, which is followed by a full or stuffed feeling, at times a burning sensation in the stomach or in the intestines, then an apathetic feeling, mild headache or dizziness, yet we continue to eat.

What happens in our body? By taking more food in than we can digest, we at first stimulate the mucous membrane of the stomach beyond its power to digest. The cells of the mucous membrane and glands are engorged, then exhausted and congested. The bowels do not act to eliminate the waste products. The food in the stomach and intestines lies there and soon it begins to ferment, the proteins split, developing butyl alcohol which is a poison. This poison is absorbed. The liver is congested because this waste material can not be manufactured into useful products for the system. Now there is more waste material in the body than can be thrown off by the skin, the kidneys and the lungs and bronchial mucous membrane. No other loose mucous membrane except in the nose, tonsils or tonsillar region if the tonsils are out, the pharynx, larynx, etc. This mucous membrane begins to eliminate the waste, and if the patient sits in a draft or gets wet in a rain and fails to change clothing quickly, then there is more engorgement in the nose and throat followed by first a watery discharge of the nose, then hot, burning sensation in the nose, a pricking in tonsillar region as if a straw or some foreign body had lodged there, then cough with no discharge, and we have a cold.

Why does the nose and throat become engorged? In perfect health when the surface blood vessels and capillaries are contracted and the blood driven out by cold drafts, the vessels in the abdominal viscera will take care of the excess and the mucous membrane of nose and throat is not materially engorged; but in a person who has an engorgement or a mild inflamation of alimentary tract and liver from overeating, we have a different condition. Here we have an excess of blood trying to absorb the waste products and poison material manufactured in the alimentary canal. When such a person is exposed to a cold draft on the body, arms,

Read before Maricopa County Medical Society, February 5, 1940.

President's Page

AS PRESIDENT of the Arizona Medical Association for the current year, the first message I would bring the membership through the medium of this President's Page is that you diligently read SOUTHWESTERN MEDICINE. This is the official medical journal for the medical societies of *Arizona, El Paso County, Texas, New Mexico,* and of the *Southwestern Medical Association.* I would like to see this *President's Page* alternated between the presidents of these organizations in order to secure a diversity of opinions and recommendations in that manner.

In reading the *President's Page* of another state medical journal, the page being the first offering of that incoming president, I was amused at his statement that he had been informed that readers of the *President's Page* were said to be only the other past presidents who had labored over their contributions. Perhaps that statement is true, and perhaps it is also true, as some members say, that the *Journal* as a whole is not widely read. I am inclined, however, to think that the contrary is true, and that the *Journal* is widely read, but that the reader does not take the time and trouble to give the editorial staff the benefit of his reactions to the various articles appearing within the pages.

So I say, read SOUTHWESTERN MEDICINE; send the editor your opinions as well as your contributions; let him know what organizational or scientific subjects you note in the *Journal* and such others as you would like to see included. The practice of medicine in the Southwest will be better for your participation and response.

Fraternally yours,

D. F. Harbridge

President, Arizona Medical Association.

legs or feet the capillaries contract more readily and more completely than in a normal person; and as the viscera is already surcharged the next place to take up the blood driven from the surface is the mucous membrane of the nose, pharynx, larynx and bronchial tubes. Now as nature is trying eliminate these poisons manufactured in the alimentary tract through the mucous membrane of the nose, throat and bronchial tubes, which is stimulated to create an excess of watery and mucous discharge, any bacteria that has been lying dormant or any that may be blown or inhaled into nose or throat at once begin to grow and we have a coryza or cold in the head. The old story of seed, soil and season. Seed will not grow without soil and season. Most of us have plenty of germs in our nose and throat to make us ill, but if the tissues are resistant enough they do not grow. But now the soil is prepared and they do grow.

DISCUSSION

DR. W. JEWELL SMITH. I feel that Dr. Bailey has brought us a thought that is very worthy of consideration. It is not a question whether our colds are due to the influenza bacillus, the pneumococcus or a filterable virus. He places the emphasis on the soil rather than the seed, and it is a point that if it were heeded would probably result in a more rational method in the handling of the so-called common cold.

A recent article by Dr. D. C. Jarvis of Barre, Vermont, brings out the point that there are twelve varieties of the common cold. He speaks of the open window cold, dusty trade cold, perspiration cold, sugar cold, chemical vapor cold, fruit and vegetable cold, citric acid cold, the post festival cold, vasomoter rhinitis starch cold, influenza type of cold and lastly the drug cold.

You will note this listing with the possible exception of the influenza type, all of these causes have to do with an altered physiological reaction due to either some outside irritant as in the case of dusty trade or chemical, or to an intrinsic cause from ingestion of foods or substances that changes the normal metabolism.

If we direct our treatment towards the elimination of these underlying causes and try to analyze each case, better results will be obtained.

EXTRA-DIABETIC USES OF INSULIN

(Continued from page 167)

We can conclude, however, that insulin is a valuable therapeutic agent in conditions other than diabetes mellitus, and that we can anticipate with a great deal of interest future research and clinical reports along these lines.

Pacific-Southwest Bldg.

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COMMUNICATIONS

Sir:

We would appreciate it if you would give notice of the postgraduate course in obstetrics for physicians, principally general practitioners, which is offered by the University of Chicago and the Chicago Lying-in Hospital in co-operation with the Illinois State Department of Health and the Children's Bureau, U. S. Department of Labor.

This course runs from 5 to 6 weeks. The only cost to the physicians would that of their board and room, their own personal incidental expenses and a nominal fee of $15. The number accepted for each course will be limited in order that a personal relationship may be maintained between the staff and the physicians. All of the members of the Department of Obstetrics and Gynecology will participate in the program.

Applications and inquiries should be addressed to Postgraduate Course, Department of Obstetrics and Gynecology, 5848 Drexel Ave., Chicago, Ill.

Very truly yours,
H. CLOSE HESSELTINE, M.D.

Sir:

The twenty-fifth annual meeting of the American Association of Industrial Physicians and Surgeons, together with the first annual meeting of the American Industrial Hygiene Association, will be held at Hotel Pennsylvania, New York City, June 4, 5, 6 and 7, 1940. This will be a four-day convention intensively devoted to the problems of industrial health in all of its various medical, technical and hygienic phases, with particular stress on prevention and control of occupational hazards. Important programs have been prepared, and technical and scientific exhibits will be a feature of the convention. The dinner on Thursday evening, June 6, will be the occasion of the presentation of the Wm. S. Knudsen award for the year of 1939-40. The medical profession is not only invited but is urged to attend these gatherings, as they will be of unusual interest and value to all practitioners interested in industrial injuries and illnesses. We will greatly appreciate whatever mention you can make in the issues of your magazine between now and June regarding the above.

Very sincerely yours,
INDUSTRIAL MEDICINE,
A. D. Cloud, Managing Editor.

Sir:

May we ask you to call the attention of your readers to the fact that the Western Branch, American Public Health Association, will hold its eleventh annual meeting in Denver, Colo., June 23-27, 1940. The program will be devoted to discussion of public health matters of special interest to the West, and will present speakers of national and western prominence.

Inquiries should be addressed to Dr. A. L. Beaghler, Director of Health Service, Denver Public Schools, or to the undersigned.

Sincerely yours.
W. F. HIGBY, Secretary.
45 Second St., San Francisco, Calif.

NEWS

General

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted at Atlantic City, N. J., from Friday, June 7, through Monday, June 10, 1940, prior to the opening of the annual meeting of the American Medical Association in New York City on Wednesday, June 12, 1940. Formal notice of the exact time and place of the examination will be forwarded to each candidate several weeks in advance of the examination dates. Group A candidates will be examined on June 7 and 8, and Group B candidates on June 9 and 10.

The annual dinner of the board will be held in New York City on Wednesday evening, June 12, at the Hotel McAlpin. Diplomates certified at the preceding days' examination will be introduced personally, and there will be several speakers. All diplomates of the board, and others interested in the work of the board, are cordially invited to attend this dinner.

Tickets at $3.50 each may be obtained from Dr. Joseph L. Baer, chairman, 104 S. Michigan Ave., Chicago, Ill., or at the registration desk during the examinations.

For further information and application blanks, address Dr. Paul Titus, secretary, 1015 Highland Bldg., Pittsburgh (6), Pa.

The American Medical Golfing Association will hold its twenty-sixth annual tournament at Winged Foot Golf Club, Mamaroneck (Westchester County), New York, on Monday, June 10, 1940. Members may tee off from 7:30 a. m. to 2:00 p. m.

Thirty-six holes of golf will be played in competition for the 50 trophies and prizes in the 8 events. Trophies will be awarded for the association championship, 36 holes gross, the Will Walter trophy; the association handicap championship, 36 holes net, the Detroit trophy; championship flight, first gross, 36 holes, the St. Louis trophy; championship flight, first net, 36 holes, the President's trophy; 18-hole championship, the Golden State trophy; 18-hole handicap championship, the Ben Thomas trophy, and the Atlantic City trophy; maturity event, limited to Fellows over 60 years of age, the Minneapolis trophy; and the oldguard championship, limited to competition of past-presidents,

the Wendell Phillips trophy. Forty other prizes will be awarded for the various flights.

All male Fellows of the American Medical Association are eligible and cordially invited to become members of the A. M. G. A. Write to Bill Burns, executive secretary, 2020 Olds Tower, Lansing, Mich., for application blank. Participants in the A. M. G. A. tournament are required to present their home club handicap, signed by the club secretary, at the first tee on the day of play. No handicap over 30 is allowed. Only active Fellows of the A. M. G. A. may compete for prizes. No trophy is awarded to a Fellow who is absent from the annual dinner, which is always worth while waiting for.

El Paso

The regular dinner and staff meeting of the Southwestern General Hospital was held Thursday, March 28, 1940, at 6:30 p. m., in the hospital auditorium. The program was as follows: "Empyema of the Gall Bladder," Dr. James Vance; discussion by Dr. C. D. Awe. "Tropical Sprue," Dr. R. B. Homan, Jr.; discussion by Dr. J. J. Gorman.

A regular staff meeting of the Hotel Dieu Sisters' Hospital was held Tuesday, April 2, 1940, at 12:10 p. m., in the auditorium of the Nurses's Home. Luncheon was served. The program was as follows: "Pneumococcic Peritonitis with Recovery," Dr. L. Villareal; discussion by Dr. Paul Gallagher. "Case of Horseshoe Kidney," Dr. W. Curtis; discussion by Dr. H. E. Rogers.

A regular meeting of the El Paso County Medical Society was held April 8, 1940, at 8:00 p. m., in the tea room of Hotel Cortez. The program was as follows: "Jaundice—Points in Diagnosis and Treatment," Dr. J. J. Gorman. "Cancer," Dr. J. W. Cathcart.

A regular meeting of the El Paso County Medical Society was held March 25, 1940, at 8:00 p. m., in the tea room of Hotel Cortez. The program was as follows: "The Role of Gastroscopy in Private Practice" (Review of 100 Cases), Dr. C. N. Giere. "Liver Function" (Illustrated by Several Cases), Dr. J. Mott Rawlings.

A regular meeting of the El Paso County Medical Socety was held April 22, 1940, at 8:00 p. m., in the tea room of Hotel Cortez. The program was as follows: "Tetanus," Dr. C. E. Jumper. "Blood Coagulation," Dr. W. W. Waite.

A regular dinner and staff meeting of the Southwestern General Hospital was held Thursday, April 25, 1940, at 6:30 p. m., in the hospital auditorium. The program was as follows: "Case Report of Schizophrenia Treated with Metrazol; Description of the Paroxysm and Resume of the Pharmacology of Metrazol," Dr. S. D. Swope. "Case Report of Encephalitis in a Child with Differential Diagnosis," Dr. Erich Spier.

MISCELLANY

1930-1940: THE VITAMIN DECADE

What medical historians will label the 30's no one can tell, but there is a good possibility that this period will go down in history as the "vitamin decade." Certainly no previous 10 years in the history of mankind has seen such advances in the knowledge of vitamins. Three columns with approximately 100 references covered the field of vitamins in Vol. 25 of the *Quarterly Cumulative Index* (Jan.-June, 1929). The corresponding period for 1939 required 26 columns of over 900 titles.

The establishment of the formula and the synthesis of vitamin A are recent triumphs of chemistry. The 11 vitamins now available in synthetic form were displayed at the national meeting of the American Chemical Society. These are vitamins A, B_1, B_2, B_6, C, D_2, E, K, riboflavin, nicotinic acid and ergosterol.

In the last decade vitamin B has become the vitamin B complex, and the elements of that complex are being defined. The Committee on Vitamin Nomenclature has advised abolishing the term vitamin B, unqualified; recommending vitamin B_1 for B_2 or G, and pellagra preventative factor or P-P factor. Nicotinic acid seems to fill the bill for the anti-pellagra factor.

Albert Szent-Gyorgi's name will always be associated with the isolation of vitamin C. For this work he was awarded the Nobel Prize in Medicine and Physiology in 1937, the first such award for vitamin research. The advances in chemical knowledge led to great strides in determining new sources of vitamin C. The therapeutic use of vitamin C in hemorrhagic and purpuric states is based upon its specific action in the hemorrhages of scurvy. However, hemorrhagic diseases of non-scorbutic origin have not responded to the use of ascorbic acid.

Several forms of vitamin D have been distinguished in recent years. The two forms of interest in medicine are activated ergosterol and activated dehydro-cholesterol. The cholesterol form is found in animal skin. Vitamin E is a fat soluble factor whose presence in the diet is necessary for fertility in rats. It seems to have a definite effect in increasing fertility among cows. There is no proof at present that vitamin E affects fecundity in human beings.

Vitamin K is also a fat soluble principle, of importance in formation of blood clot. Vitamin K seems to be essential for the production of prothrombin. There is evidence to show that hemorrhagic states common in obstructive jaundice can be controlled by the proper administration of vitamin K.

There is no doubt that large underprivileged groups within the population suffer from vitamin deficiencies. The proper treatment of these people

is provision for adequate diets rather than wholesale exhibition of vitamin mixtures. The council on pharmacy and chemistry of the American Medical Association does not recognize preparations including a variety of vitamins excepting combinations of A and D. An excellent summary of recent knowledge on vitamins is contained in the symposium on the subject published in book form by the American Medical Association in 1939.

Vitamin research bloomed full flower in the 30's. But the wealth of knowledge gained of new sources, the exaggerated claims, the fads will wither away. New uses, and even of new elements in the vitamin series, should serve mankind for all time to come.—*Journal-Lancet.*

OPTOMETRY AND THE EYES OF SCHOOL CHILDREN

School physicians and nurses discover many cases of defective vision, and advise the parents to take the children to a physician for diagnosis and treatment. This advice is important, because many cases of defective vision are caused by pathological changes in the eye itself, or some disturbance elsewhere in the body—conditions which an optometrist is incapable of diagnosing or treating. The physician is the proper one to decide whether an individual case needs the services of a specialist and what kind of a specialist.

Furthermore, in many cases of refractive error, especially in young children, no one can make accurate examination without the aid of a cyclopegis ("drops"), a procedure which optometrists cannot legally employ.

Since an accurate diagnosis is a necessary preliminary to any treatment, the school nurse is legally required to advise the parents of a child to have a diagnosis made by a licensed physician, for only he is empowered to make a pathological diagnosis and to prescribe drugs and operations for relief.—*Jour. Med. Soc. N. J.*

PSYCHONEUROSIS AND BACKACHE

The psychoneurotic group of patients is one of profound interest. To dismiss these patients as neurotic or to classify them among those of constitutionally inadequate personality is neither fair to the patient nor is it in the spirit of Hippocrates. Undoubtedly some patients are malingerers who recover with the settlement of their compensation claims or the fulfillment of their subconscious desires, of which their backache is but the outward manifestation, but the majority are honest.

Most of us willingly admit that the presence of a congenital defect in the osseous skeleton predisposes that individual to backache from subsequent trauma, but are we as lenient with those whose complaints are of those conditions which, for want of a better name, we term functional? Might there not be congenitally weak links in the gossamer elements of which the central nervous system is built up? If we admit that a developmental defect in bone may predispose to the occurrence of pain following even slight trauma, should we not be equally ready to extend similar credence to those whose pains are mostly "in their heads"?

The nervous, anxious woman with a painful coccyx may obtain, in our experience, only a temporary respite from pain by surgical methods. The majority, if they receive daily Sitz baths, encouragement, diathermy and massage of the coccygeus muscles, will obtain relief from symptoms.—*Arch. Phys. Therapy.*

DRUG DISPENSING

Physicians who dispense their own drugs must comply with the provisions of the Federal Food, Drug and Cosmetic Act, particularly Section 502-b. This section provides that a drug or device shall be deemed misbranded "If in package form unless it bears a label (1) showing name, place of business of manufacturer, packer or distributor; (2) an accurate statement of the quantity of the contents in terms of weight, measure, or numerical count, reasonable variation permitted."

As the law is written, it applies to physicians who dispense their own drugs, as well as to pharmacists, drug stores, or anyone who manufactures or distributes drugs. The physician (and the drug store or pharmacist) is exempt from these labeling provisions, *only IF* he writes a prescription and sends the patient to the druggist for the medicine.

Other parts of Section 502 are also of interest to physicians, such as Part D re labeling of narcotic drugs as "habit forming" unless on written prescription which is marked unrefillable; Part E requiring the common or usual name of the drug, if one, to be written on the label; or the names of the active ingredients giving the proportion or quantity of bromides, ether, chloroform, acetanilid, acetphenetidin, amidopyrine, antipyrine, atrophine, hyoscine, hyoscyamine, arsenic, digitalis, digitalis glucosides, mercury, ouabain, strophanthin, strychnine, thyroid, or any derivatives of such substances, UNLESS given in a written prescription: Part F requiring adequate directions for use.

The aim of the law, of course, is to eliminate "counter prescribing" by drug stores and harmful self-medication with highly potent and often dangerous drugs. It is not known just how strenuously the Federal Food, Drug and Cosmetic Administration will require physicians who dispense to adhere to this particular portion of the law, but it is a federal statute and should be complied with.—*Jo. Ms. M. S.*

SULFATHIAZOLE AND SULFAMETHYLTHIAZOLE

Recently there have been reports that two derivatives of sulfapyridine, sulfathiazole (2(para-amino-benzene-sulfonamido) thiazole) and sulfamethylthiazole (2(para-amino-benzene-sulfonamido) 4-methylthiazole), give some promise of therapeutic effect. The Council on Pharmacy and Chem-

istry of the American Medcal Association has not given consideration to the acceptability of the names sulfathiazole and sulfamethylthiazole. However, since the medical profession has such interest in sulfanilamide and its derivatives, the council asked Dr. Perrin H. Long to prepare a preliminary report on these two substances. Dr. Long reports that it is too early to pronounce on the comparative clinical therapeutic effects of sulfathiazole and sulfapyridine, but that experience to date indicates that sulfathiazole is about as effective as sulfapyridine in pneumococcic pneumonia in human beings and at least as effective as sulfapyridine, if not more so, in staphylococcic infections in man. Dr. Long concludes: "The evaluation of these new chemotherapeutic compounds will necessitate extensive experimental and clinical investigations in order to determine their efficiency in the control of infections and their clinical toxic manifestations. Until the time when such data are in hand, it is to be hoped that enthusiasms do not outrun common sense." The council concurs with the conclusions of Dr. Long. The two preparations have not been licensed by the Food and Drug Administration for sale in interstate commerce (as new drugs). This gives opportunity for the medical profession to be informed about the drugs before they are exploited. No firm has submitted these drugs for consideration by the council.—*J. A. M. A.*

BRIGHT'S DISEASE

Richard Bright (1789-1858), lecturer on the practice of medicine and one of the physicians to Guy's Hospital, included in his *Reports of Medical Cases, Selected with a View of Illustrating the Symptoms and Cure of Diseases by a Reference to Morbid Anatomy* (London: Longman, Rees, Orme, Brown and Green, 1827) the results of his investigations of the pathologic conditions associated with albuminous urine. Their epoch-making character has served to attach his name permanently to the whole group of nonsurgical diseases of the kidney. The following quotation is taken from the introductory remarks of the author:

The different diseases of the heart and of the lungs on which dropsy depends, and the various changes to which the liver is subject rendering it a cause of impediment to the circulation, are still open to much investigation. . . .

There are other appearances to which I think too little attention has hitherto been paid. They are those evidences of organic change which occasionally present themselves in the structure of the KIDNEY; and which, whether they are to be considered as the cause of the dropsical effusion or as the consequence of some other disease, cannot be unimportant. Where those conditions of the kidney to which I allude have occurred, I have often found the dropsy connected with the secretion of albuminous urine, more or less coagulable on the application of heat. I have in general found that the liver has not in these cases betrayed any considerable marks of disease, either during life or on examination after death, though occasionally incipient disorganization of a peculiar kind has been traced in that organ. On the other hand, I have found that where the dropsy has depended on organic change in the liver, even in the most aggravated state of such change no diseased structure has generally been discovered in the kidneys, and the urine has not coagulated by heat. I have never yet examined the body of a patient dying with dropsy attended with coagulable urine in whom some obvious derangement was not discovered in the kidneys.

—*N. E. Jour. Med.*

"SENATORIAL MINDS"

Under the heading "Statesmanship or Demagoguery," the *Pittsburgh Medical Bulletin* of June 10 published an article dealing with the recent hearing in Washington on Senate Bill 1620, the so-called Wagner National Health Bill, at which representatives of the A. M. A. testified.

The article records briefly some of the statements made by A. M. A. witnesses and some of the heckling questions or statements made by some member of the Senatorial committee.

Following are some typical examples of how some Senatorial minds function especially if they are biased or the statesman thinks it wise to speak for the record:

"Ah, doctor, then your association is not in favor of 'poor' boys receiving a medical education, and stands for the continuation of the present system of educating the sons of the well to do?"

"How better can these states (i.e., southern and western states) seek the return to them from Boston of money filched from the natural resources of these far removed states by northern and eastern capitalists?"

"Why, doctor, don't you know that in the largest city in my state men drop on the street and die like flies from silicosis?"

"I suppose, then, if we would permit your association to name the personnel you would be satisfied to help us to amend this bill."

The writer of the article from which the above were taken states that he "finds no reason to alter his sincere belief that the credited author of the under discussion and the majority of the committee who were present remain definitely committed to the current federal administration's program of extravagant spending of the people's money for increasing health, diminishing agricultural and manufactured commodity production, increased taxes and diminished per capita wealth."

He puts the timely and pertinent question: "After reading the following paragraphs, (those quoted above) what do you think?"

We might answer by saying: It's about time for everybody, including the doctor, lawyer, merchant, chief, etc., to begin to think—better yet, to act.

—*Ohio St. Med. J.*

ULTRA VIOLET THERAPY

Indications

Ultraviolet irradiation has been recommended for such a ridiculously large variety of diseases that

it is absurd to name them all, or even to imagine that this agent is really of value in them all. However, there are a few diseases where the use of ultraviolet radiation is scientifically correct and a number more where its use is supported by enough clinical evidence to be impressive.

1.—*Rickets, Infantile Tetany or Spasmophilia, and Osteomalacia*: The well-proved ultraviolet effect upon calcium metabolism, by the formation of vitamin D, makes its use rational in these conditions.

2.—*Tuberculosis*: Most authorities agree that ultraviolet radiation is useful as an adjunct to the usual treatment (rest, food, etc.) in *extrapulmonary* tuberculosis. This includes tuberculosis of the bones or joints, of lymph glands, of the peritoneum and intestines, and of the genito-urinary system.

In some selected forms of chronic pulmonary tuberculosis many workers think that ultraviolet therapy is indicated, while others believe that it is contraindicated in all forms of pulmonary tuberculosis.

3.—*Erysipelas*: In my opinion ultraviolet irradiation is the method of choice in the treatment of erysipelas. The mode of action is not yet understood, but the clinical results can no longer be doubted. We have treated more than 500 cases by this method, with very satisfactory results.

However, it is extremely important that *heavy doses* of ultraviolet be given in the treatment of erysipelas, from six to twenty erythema doses being used, according to the type and efficiency of the lamp employed.

4.—*Certain Skin Diseases*: Many dermatologists employ ultraviolet as an aid in the treatment of certain skin affections. Among these may be listed lupus vulgaris, scrofuloderma, pityriasis rosea, psoriasis, acne vulgaris, adenoma sebaceum, erythema induratum, and alopecia areata.

5.—*Indolent Ulcers*: Some well-controlled work has indicated that ultraviolet is of value in the treatment of indolent ulcers and to promote the healing of wounds in general. This includes its use in the treatment of chronic draining sinuses, decubitus ulcers, and other such conditions, when it is possible to reach the affected areas with ultraviolet radiation. It is important to use *small doses*.

6.—*Burns*: Following extensive burns, the healing period mayl be greatly shortened by the use of ultraviolet radiation, according to Peck.

7.—*Tonic Ultraviolet*: In many chronic diseases, where malnutrition or deprivation of sunlight due to hospitalization is a factor, the use of ultraviolet radiation is indicated for its tonic and psychologic, as well as antianemic, effects. It may also aid in

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the prevention of bedsores. In this group may be included sufferers from arthritis of any type, paralysis, multiple sclerosis, neurasthenia, hemiplegia, and many other chronic conditions.

Contraindications

The use of ultraviolet radiation is generally agreed to be contraindicated in active and progressive forms of pulmonary tuberculosis, hyperthyroidism, diabetes, highly nervous people, patients with advanced cachexia or inanition, and aged people with acute or chronic nephritis or myocarditis. It is also contraindicated in certain skin diseases. These include: all forms of generalized dermatitis, lupus erythematosus, herpes simplex, erythema solare perstans, xeroderma pigmentosum, hydroaestivale, freckles, atrophy, keratoses, and prematurely senile skin.

—*Minn. Med.*

OCULAR ENDOCRINOPATHY

There is no doubt that many eye diseases are a result of a disturbance or disease of the glands of internal secretion. Some of them, like diabetic retinopathy and proptosis in exophthalmic goiter are universally recognized to be on that basis. We are likely to forget, however, that others such as iridocyclitis, idiopathic blepharospasm, accommodation insufficiency and many others may also be caused by an endocrine disturbance. It would be well if an examination of the endocrine system were made part of the routine physical examination when searching for a possible systemic cause of diseases of the eye such as iridocyclitis, papillitis, retrobular neuritis and others. The ophthalmologist should also bear this etiological factor in mind when treating intractable cases of asthenopia, epiphora, blepharospasm, recurrent chalazia and other conditions that persist in spite of the usual medical management. In some of these the endocrine disturbance is the actual cause of the eye disease, while in others it throws the reparative defense mechanism out of equilibrium so that the usual medication is of no avail.

—*Ill. Med. Jo.*

BOOK NOTES

MANAGEMENT OF OBSTETRIC DIFFICULTIES: Paul Titus, M. D., Obstetrician and Gynecologist St. Margaret Memorial Hospital, Pittsburg; Consulting Obstetrician and Gynecologist, Pittsburg Homes and Hospital, Homestead, Pa.; Secretary American Board of Obstetrics and Gynecology. Pp. 968 including index. Cloth. Illustrations 368 with 5 color plates. 2nd edition. 10.00. St. Louis, The C. V. Mosby Co. 1940.

Many new things of importance are found in this edition. The reader's interest is at once aroused in the up-to-the-minute discussion of causative factors in sterility in the opening chapter, and the detailed treatment of sterility in the next chapter, is sustained in the following section on modern

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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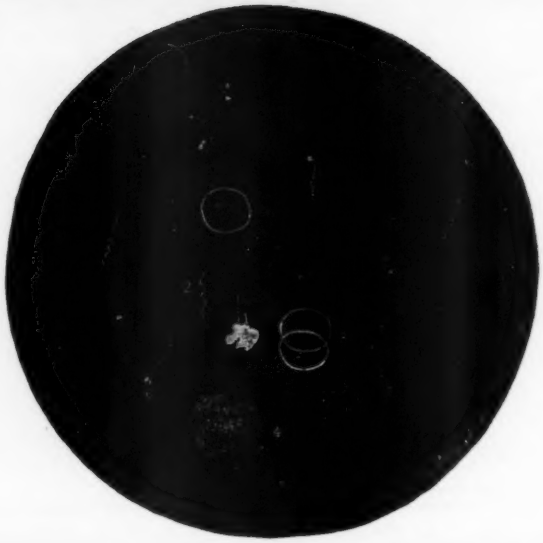

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methods of diagnosis of pregnancy and on through the final section wherein there is an interesting discussion of analgesia and all the important routine procedures of obstetric care.

The newer treatments of puerperal infection with sulfanilamide and blood transfusions are discussed and more space is given to the newer concepts of post partum care and treatment. The patient receives not only a six weeks' but a six months' examination and many others when indicated. This includes the proper treatment of the cervix with the electric cautery or with conization when indicated.

At the end of the chapter on Contracted Pelvis there is an added section on x-ray pelvimetry. There is a short description of two leading techniques of roentgen pelvimetry and a paragraph on cephalometry as studied by S. H. Clifford of Boston which gives the obstetrician a knowledge of the size of the fetus in utero.

The section on operative deliveries, and in fact the detailed technique on most any obstetric procedure, is the answer to the practitioner's prayer. Here is a book that should be just outside the delivery room, conveniently located where the physician, when the emergency arises, can get expert consultation without too much confusion as to the diverse methods, what to do, and how it is done.

C. F. R.

HAND-BOOK OF TREATMENT, by Edward A. Mullen, P.D., M.D., F.A.C.S., Instructor in Materia Medica, University of Penna. Medical School; Assistant Professor Pharmacology and Physiology, Philadelphia College of Pharmacy and Science; Lieutenant Commander, Medical Corps, U. S. Naval Reserve; Foreword by Horatio C. Wood, Jr., Professor of Therapeutics in University of Pennsylvania, Graduate School of Medicine; Professor of Pharmacology and Physiology, Philadelphie College of Pharmacy and Science; second revised edition; Philadelphia; F. A. Davis Company, Publishers, 1940, $4.50.

This book contains a great wealth of practical material—in 707 pages—and yet it is not bulky; an inch or a shade more in thickness. The covers are semi-flexible. It is designed for easy reference. The material is such that the practitioner will wish to keep the book on the desk for frequent use. If one wishes a prescription for eczema, worms, rheumatism, pellagra, diarrhea or any other malady, he will find the very latest by turning through the pages; all material is arranged alphabetically.

The appendix contains a large amount of useful information which might not properly belong in such a volume except to add to its practicability. Among the subjects dealt with are: intravenous and hypodermic medication and formulae; formulae for fluid foods; diet lists; fractures, dislocations and sprains; hints on prescribing; chart of eruptive contagious diseases; table of differential diagnoses; physician's dose table; weights and measures; comparison of thermometers; female pelvis and uterus measurements; table for calculating the period of uterogestation; table for conception periods for 21- and 38-day menstrual cycles; hemor-

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rhages and wounds; asphyxia and apea; poisons and antidotes; types of baths; miscellaneous emergencies; pulse and respiration rates for different ages; the physician's interpreter outlined in five languages.—*O. H. B.*

ELMER AND ROSE-PHYSICAL DIAGNOSIS, by Harry Walker, M.D., F.A.C.P. Associate Professor of Medicine, Medical College of Virginia, Richmond, Virginia. 8th Edition. Cloth. Price? Pp. 792, with 295 Illustrations. St. Louis, C. V. Mosby Company, 1940.

Rose started it, Elmer rearranged it and rewrote it, and now the torch is held by Harry Walker—and held high.

It is an excellent work representing a complete summary of the application of the old as well as the newer understanding of clinical findings. It is a large book (better than 4 pounds), but there is little or nothing that might safely be omitted. But avoidance of prolixity would about cut it in half (Cf. p. 345, first two paragraphs). The book would be less impressive but more usable.

An excellent chapter on the heart by Drew Luten is marred by having some illustrations reading from bottom to top of the page instead of across.

There is a good index. It is an excellent work. It deserves wide circulation and use.—*P. G.*

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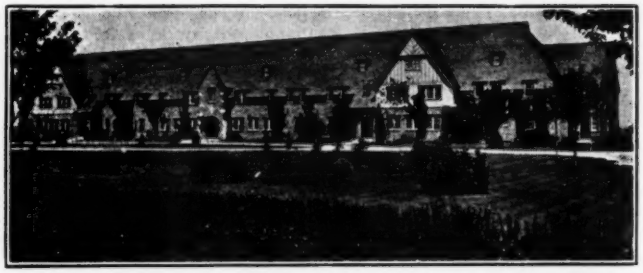

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Index to Advertisers

Borah, Chas. E. II

Coca Cola Co. 181
Corn Products Co. X
Cutter Laboratories ..... Cover 4

Dorsey-Burke Drug Store IV

Holland-Rantos Co., Inc. VII
Hynson, Wescott & Dunning 180

Las Encinas Sanatarium V
Lilly & Company, Eli XII
Los Angeles Tumor Institute IV
Lovelace Clinic II

Mason-Miller Drug Co. IV
Mead Johnson Company IX
Medical & Dental Finance Bureau II
Merck & Co., Inc. 179
Mountain States Tel. & Tel. Co. 180

Owens, Hala, Sanitarium II

Pathological Laboratory ..... Cover 1
Pathological Laboratory II
Parke, Davis & Company VIII
Petrolagar ..... Cover 2
Physicians' Casualty Asociation 183

S. M. A. Corp. ..... Cover 3
Smith-Dorsey Co. 177
Smith, Kline & French Laboratories XI
Southwestern Surgical Supply Co. 181
Specialists in the Southwest ..... II, III
Squibb & Sons, E. R. VI

Taylor Printing Co. 183
Turner's Clinical & X-ray Laboratories 182

Upjohn Co., The I

Wayland Prescription Pharmacy IV
Womack Clinic III
Woodcroft Hospital 182
Wyeth & Bro., John 178